PS

THE PREVENTIVE MAINTENANCE MONTHLY

FOR THE DRIVER, GUNNER, MECHANIC

Issue 21
1954 Series

Special Feature

TIRES

See pages 954 - 964

PM

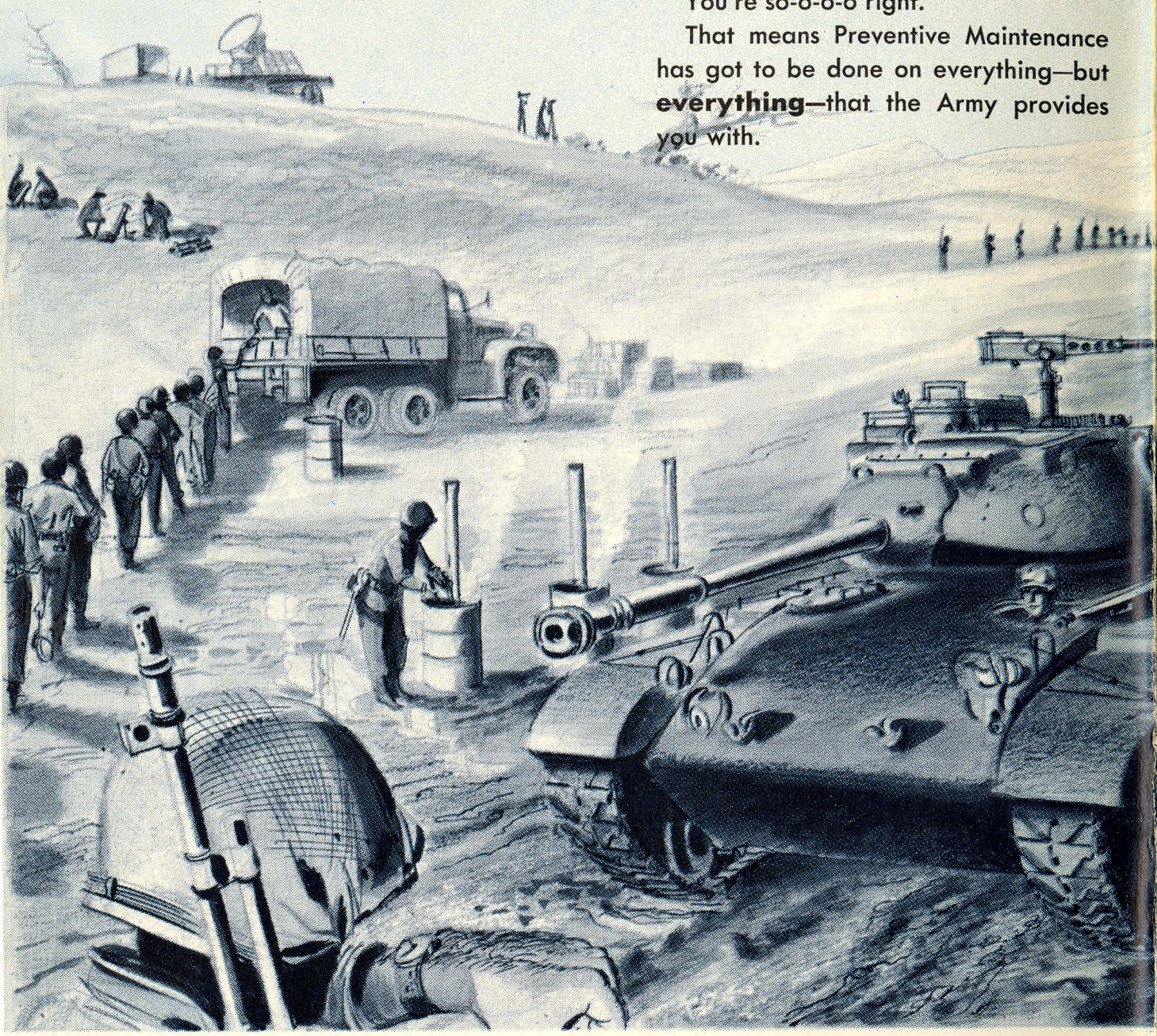
FOR ALL EQUIPMENT

Some people have the funny idea that Preventive Maintenance is something you do only on trucks and tanks.

Sorry—doesn't work that way. What'd happen to the scads of other types of Ordnance and Engineer equipment if they got no Preventive Maintenance? And you answer—o' course—"They'd go to pot before you could wink twice at Connie Rodd."

You're so-o-o-o right.

That means Preventive Maintenance has got to be done on everything—but **everything**—that the Army provides you with.



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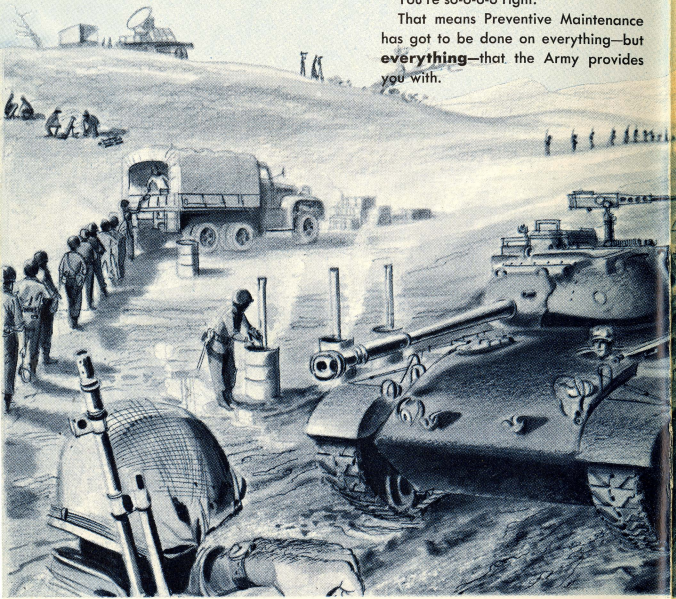
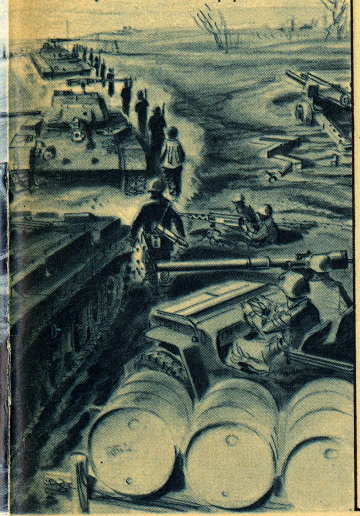


Somebody—meaning you—has got to keep at work on that gun, fire-director, compass, binoculars, drill, rifle, pistol, rocket-launcher, wrist-watch, generator, bull-dozer, or what-have-you.

It's a complicated job like all the cleaning and adjusting you got to do on the M33 fire-control unit; or all the dirty, knuckle-bustin' work to keep an M48 tank zippy and ready to roll and ready to fire.

Or—it could be such an easy job as keeping your Ordnance wrist-watch clean and dry; or rubbing down your trusty M1.

So, y'see, Maintenance—**Preventive** Maintenance—is for **all** equipment.



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PS Magazine wants your ideas and contributions, and is glad to answer your questions. Just write: **Editor, PS Magazine, Aberdeen Proving Ground, Maryland.**

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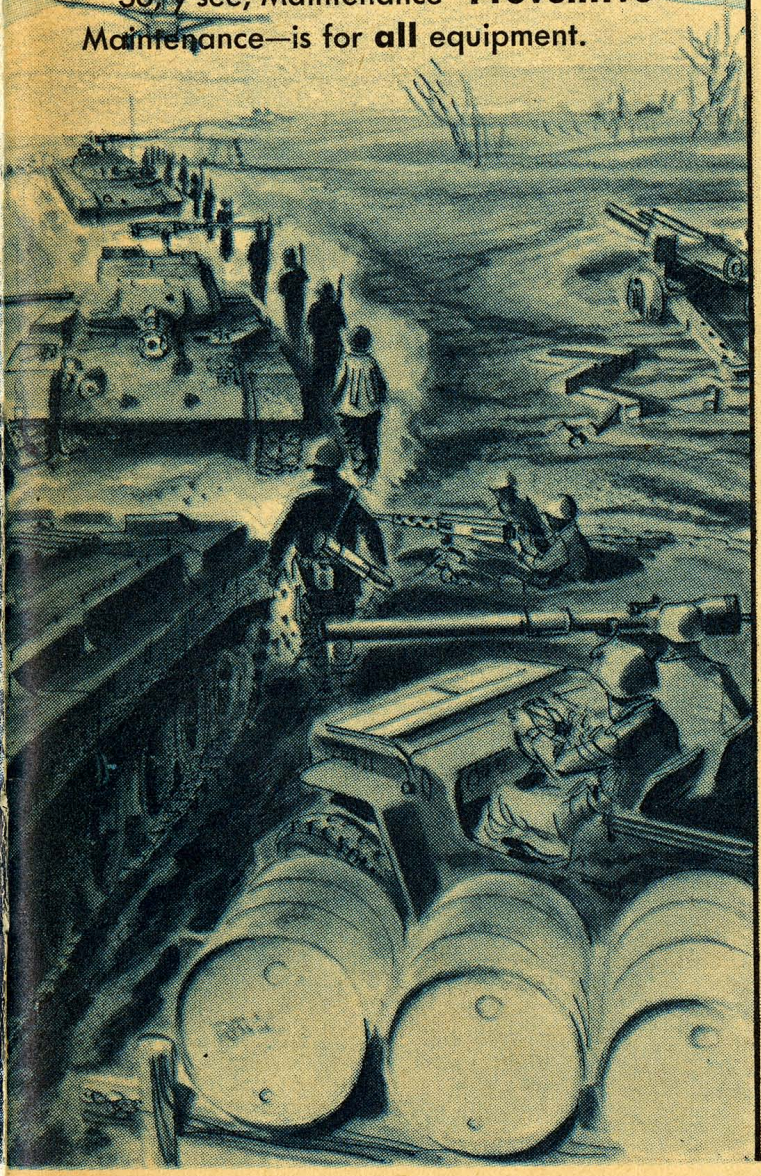

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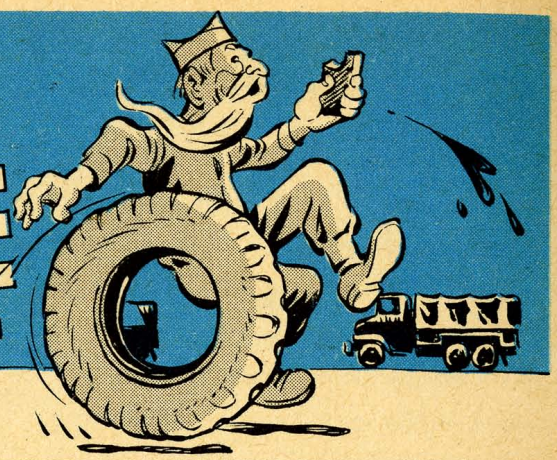
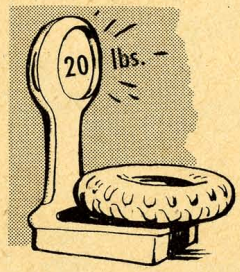
TIRE LIFE INSURANCE

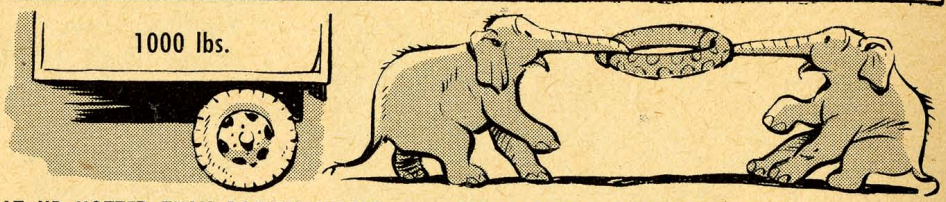


PLUS HEALTH AND ACCIDENT CARE



IT'S A LIGHTWEIGHT . . . BUT IT'S TOUGH.

GOOD CARE IS THE BEST LIFE INSURANCE FOR TIRES. GOOD CARE KEEPS 'EM ROUND AND HAPPY AND ROLLING. BUT MANY A RUBBER ROLLER MEETS WITH BAD LUCK AND ACCIDENTS. SO THE BEST THING YOU CAN DO FOR A WOUNDED TIRE IS GET IT OFF THE WHEEL—BEFORE IT GETS SICKER AND DIES ON YOU. SO HERE WE ARE, GENTS—SOME TIPS ON TIRE CARE IN SICKNESS AND HEALTH TILL DEATH DO US PART.



IT CAN HEAT UP HOTTER THAN BOILING WATER . . . RESIST 1 TON OF TEARING FORCE.

AN **INJURED** TIRE CAN'T TAKE IT... **TURN IT IN!**

YOU DON'T NEED AN EXCUSE TO SWAP THAT SHOE

TREAD DESIGN WORN OUT IN CENTER

A LITTLE CUT IS BIG ENOUGH

A SMOOTH TIRE.

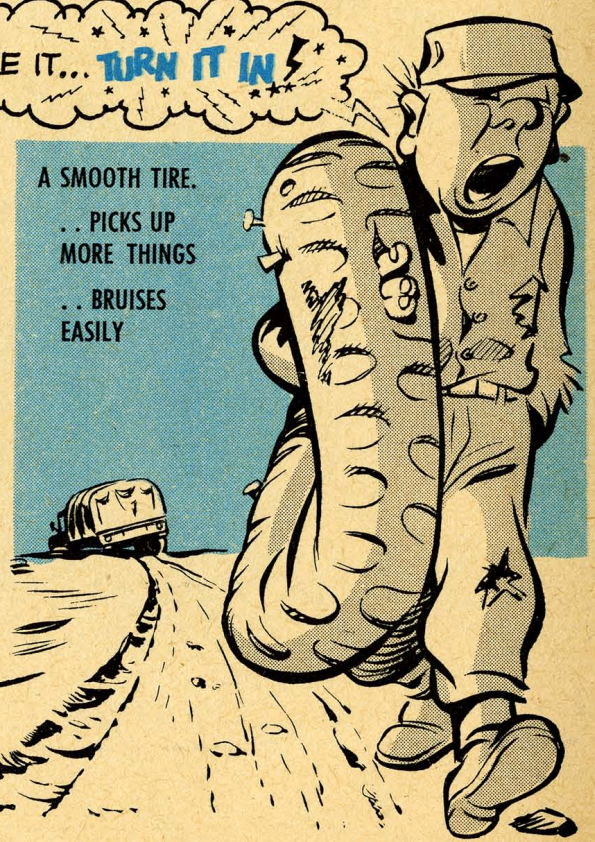
. . PICKS UP MORE THINGS

. . BRUISES EASILY

UNEVEN WORN SPOTS

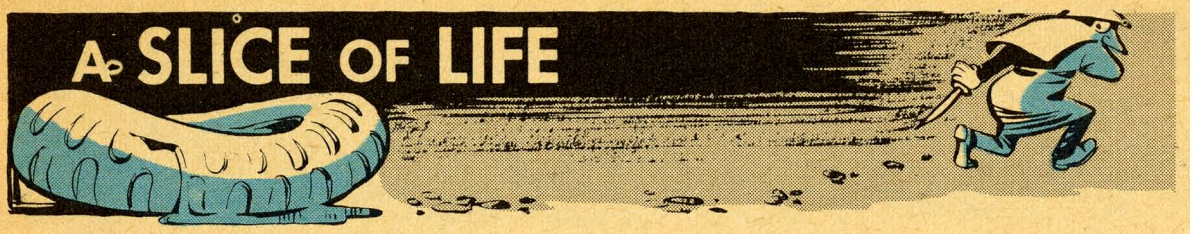
SHARP OR FEATHER EDGE ON TREAD

WHEELS OUT O' LINE

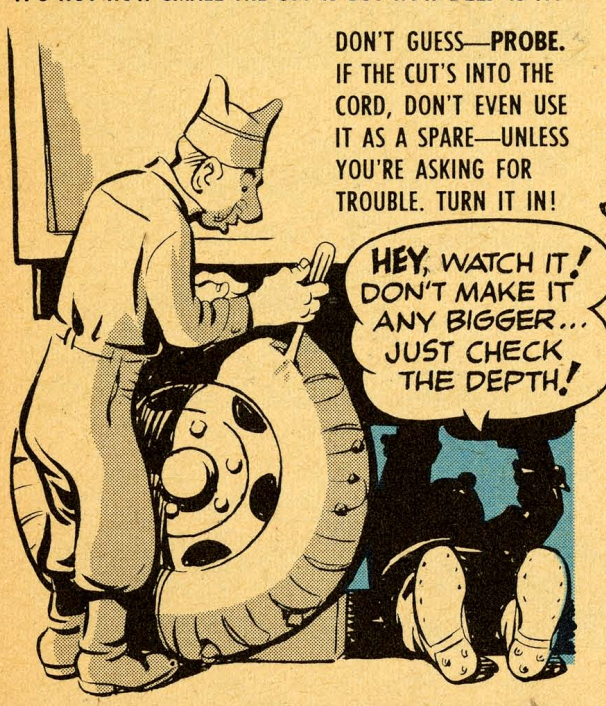


A WHEEL 1/2 INCH OUT OF LINE DRAGS THE TIRE SIDEWAYS 87 FEET IN EVERY MILE

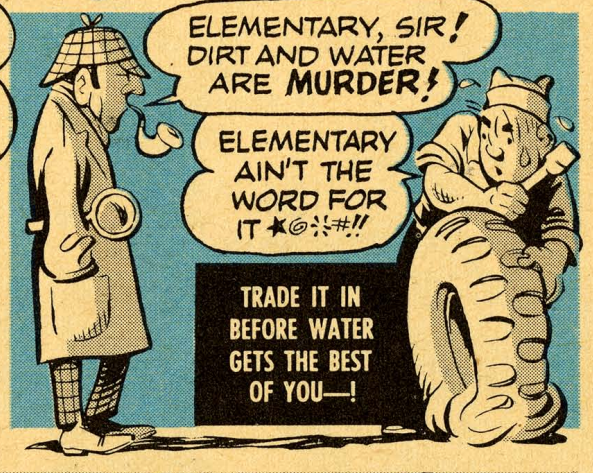
A SLICE OF LIFE



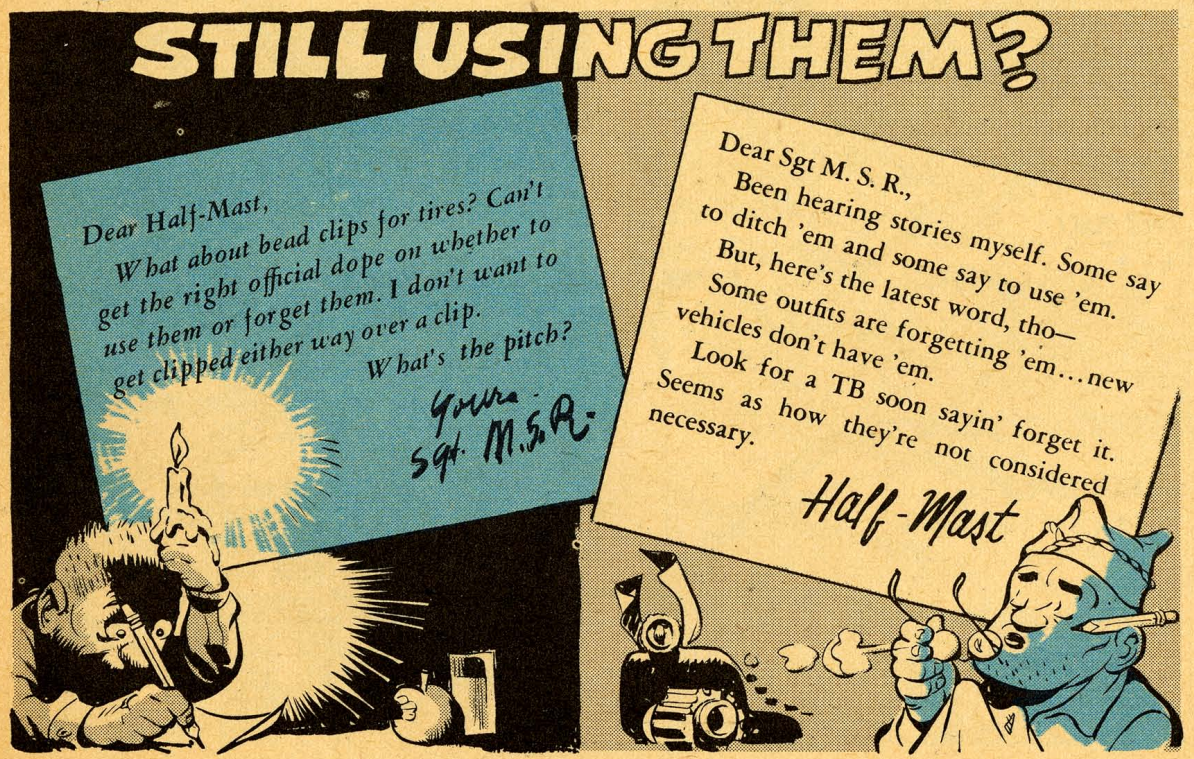
KEEP YOUR EYES PEELED FOR TREAD CUTS
IT'S NOT HOW SMALL THE CUT IS BUT HOW **DEEP** IS IT?



SO A TIRE'S BRUISED, CUT OR SCUFFED PRACTICALLY DOWN TO THE CORD AND YOU LEAVE IT ON AND WHAT HAPPENS?



STILL USING THEM?

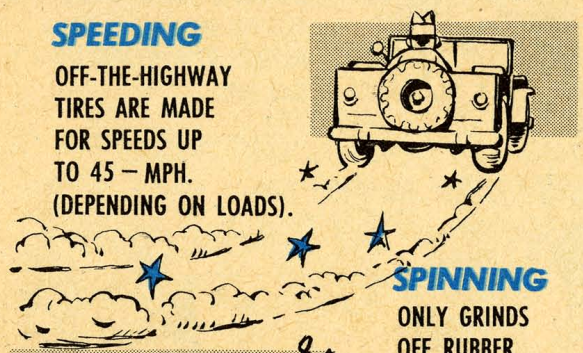


TIRE KILLERS

BAD DRIVING HABITS

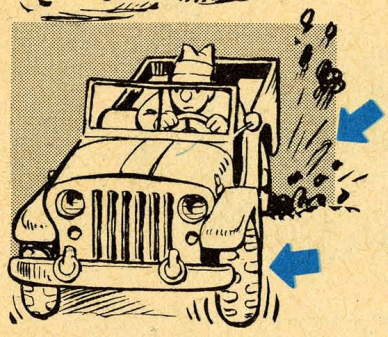
SPEEDING

OFF-THE-HIGHWAY TIRES ARE MADE FOR SPEEDS UP TO 45 — MPH. (DEPENDING ON LOADS).



SPINNING

ONLY GRINDS OFF RUBBER AND GETS YOU IN DEEPER. GET HELP . . . GET OUT . . . GET GOING.

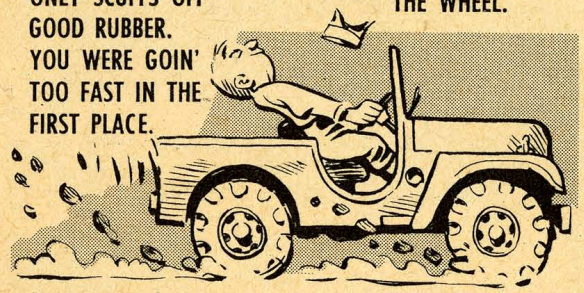


PIVOTING

WHILE STANDING STILL ONLY DAMAGES TIRES. GET MOVING TO TURN THE WHEEL.

SLAMMING BRAKES

ONLY SCUFFS OFF GOOD RUBBER. YOU WERE GOIN' TOO FAST IN THE FIRST PLACE.



RUBBING

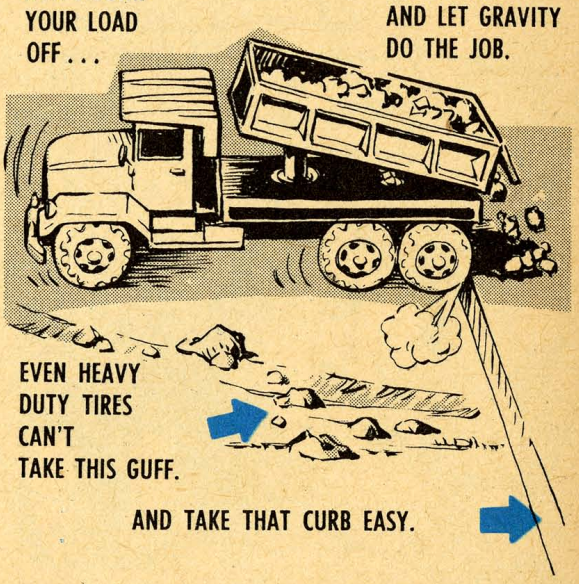
TIRES DON'T APPRECIATE A RUBDOWN . . . KEEP CLEAR OF CURBS AND SIDE BANKS.

TAKE CORNERS SLOW SO TIRES DON'T RUB AGAINST FENDERS OR SPRINGS.

IMPACT

DON'T JUMP YOUR LOAD OFF . . .

TILT IT MORE AND LET GRAVITY DO THE JOB.

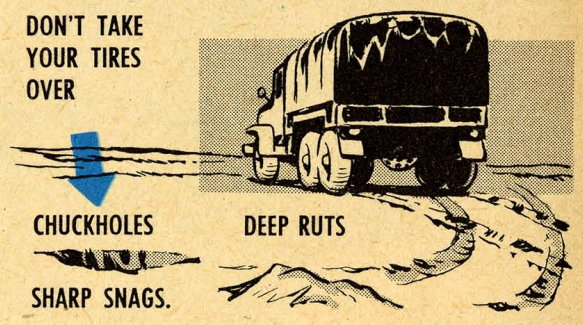


EVEN HEAVY DUTY TIRES CAN'T TAKE THIS GUFF.

AND TAKE THAT CURB EASY.

CUTS

DON'T TAKE YOUR TIRES OVER



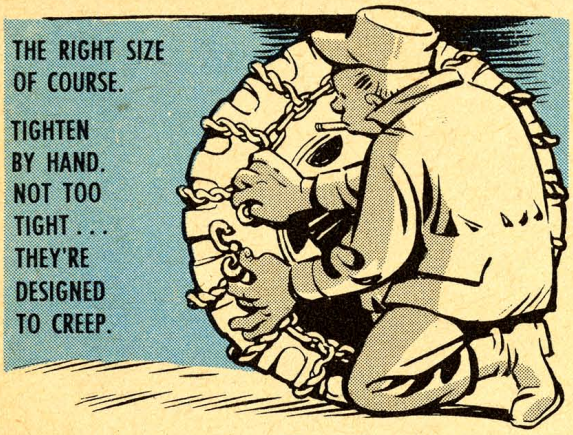
CHUCKHOLES

DEEP RUTS

SHARP SNAGS.

THEY CHOP TIRES AS EASY AS A SHARP KNIFE.

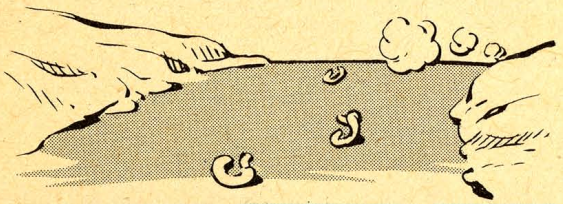
CHAINS



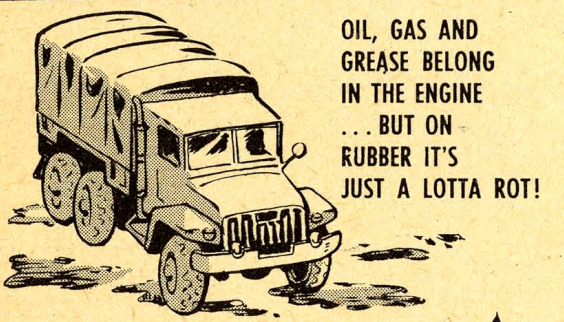
THE RIGHT SIZE OF COURSE.

TIGHTEN BY HAND. NOT TOO TIGHT . . . THEY'RE DESIGNED TO CREEP.

USE ONLY AS LONG AS NECESSARY . . . SPECIALLY ON CONCRETE.



GREASE



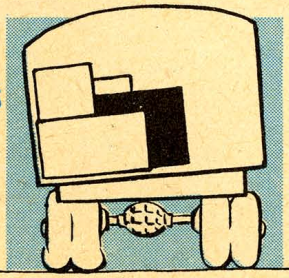
OIL, GAS AND GREASE BELONG IN THE ENGINE . . . BUT ON RUBBER IT'S JUST A LOTTA ROT!

UNBALANCED LOAD

WHAT HAPPENS?

. . . AFFECTS STEERING

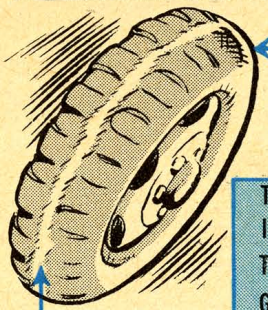
. . . RUINS TIRES ON THIS SIDE



. . . WHEELS SLIP ON THIS SIDE

STRAIGHTEN UP AND FLY RIGHT

POOR MAINTENANCE



WORN SPOT?

CHECK BRAKES.

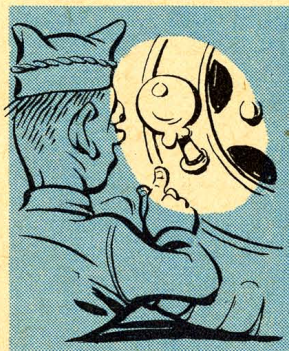
RAPID, UNEVEN WEAR?

TOO MUCH PLAY IN WHEEL BEARINGS, TIE RODS, STEERING GEARS, DRAG LINKS OR SPRING SHACKLES. CHECK OFTEN.

A GRABBY CLUTCH IS HECK* ON TIRES. (*COMMON ANGLO-SAXON WORD)

KEEP IT ADJUSTED

LEAKY VALVE CORE?



IF SPIT ON VALVE BUBBLES, REPLACE CORE.

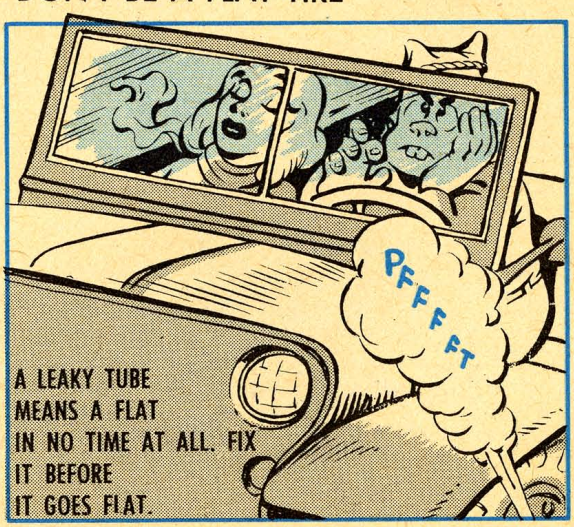
. . . USE CORRECT TYPE

. . . MOUNT PROPERLY

. . . KEEP OUT DIRT WITH VALVE CAP

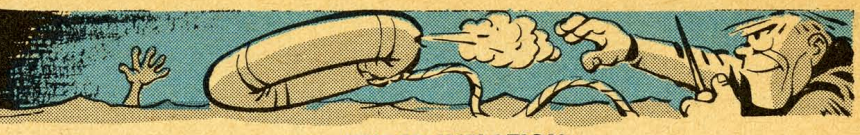
. . . COCKED VALVE STEM? BREAK TIRE LOOSE FROM WHEEL AND TURN.

DON'T BE A FLAT TIRE—



A LEAKY TUBE MEANS A FLAT IN NO TIME AT ALL. FIX IT BEFORE IT GOES FLAT.

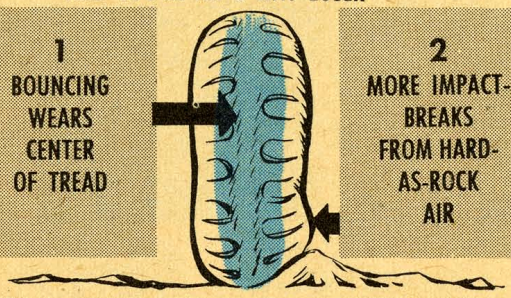
IMPROPER INFLATION



OVER INFLATION DOESN'T MAKE A TIRE STRONGER . . . IT ONLY REDUCES ABILITY TO TAKE ROAD SHOCK.
AND YOU'RE AN 8-WAY LOSER

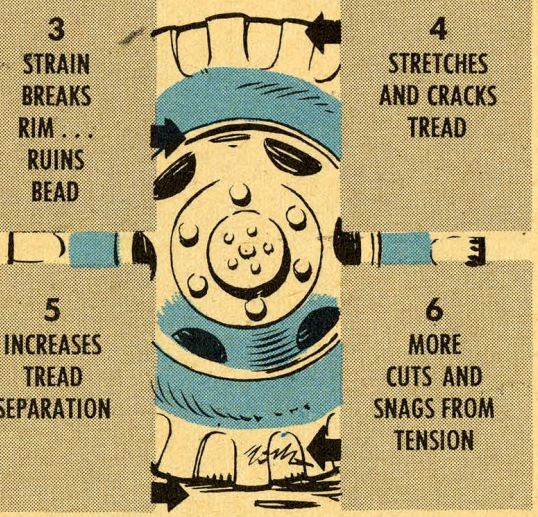
1 BOUNCING WEARS CENTER OF TREAD

2 MORE IMPACT-BREAKS FROM HARD-AS-ROCK AIR



3 STRAIN BREAKS RIM . . . RUINS BEAD

4 STRETCHES AND CRACKS TREAD

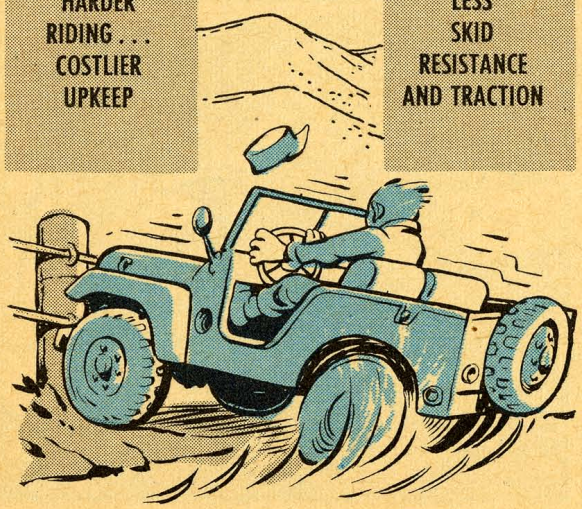


5 INCREASES TREAD SEPARATION

6 MORE CUTS AND SNAGS FROM TENSION

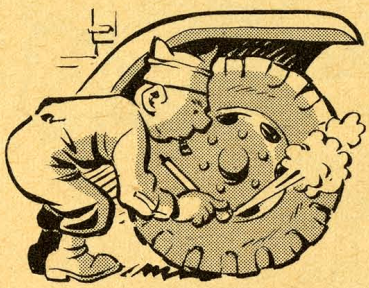
7 HARDER RIDING . . . COSTLIER UPKEEP

8 LESS SKID RESISTANCE AND TRACTION



UNDER INFLATION

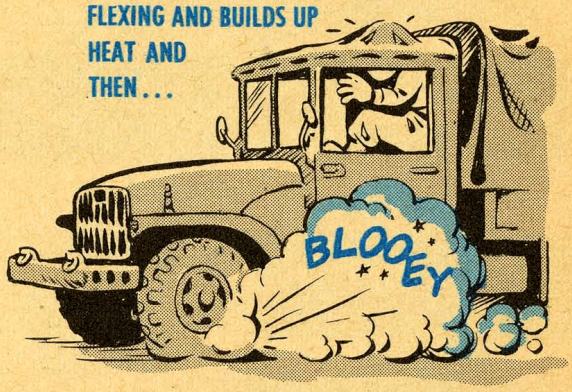
THE VICTIM STARTS OUT RIGHT ON THE BALL WITH 70 LBS PRESSURE.



RIDES 125 MILES. FINDS PRESSURE BUILT UP TO 90 LBS. HE BLEEDS BACK TO 70 LBS.

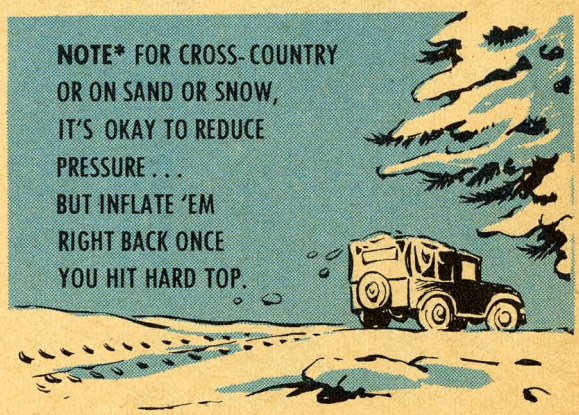
OOH—WHAT HE DID!

LOWERING THE PRESSURE CAUSES EXCESSIVE FLEXING AND BUILDS UP HEAT AND THEN . . .

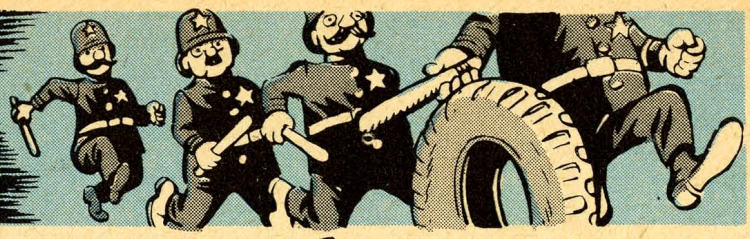


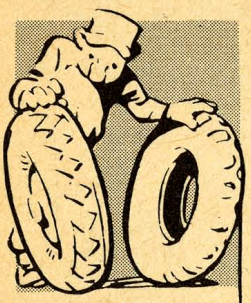
SO . . . CHECK TIRES COLD AND LEAVE 'EM THAT WAY.
IN ALL CASES FOLLOW DIRECTIONS ON SERVICE PLATE FOR **CORRECT PRESSURE.**

NOTE* FOR CROSS-COUNTRY OR ON SAND OR SNOW, IT'S OKAY TO REDUCE PRESSURE . . . BUT INFLATE 'EM RIGHT BACK ONCE YOU HIT HARD TOP.



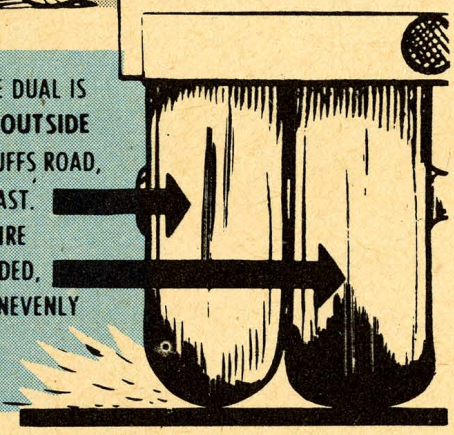
LIFE SAVERS





DUAL TIRES MUST BE PROPERLY MATCHED AND HAVE SAME TREAD DESIGN

IF INSIDE DUAL IS LARGER, **OUTSIDE** DUAL SCUFFS ROAD, WEARS FAST. **INSIDE** TIRE OVERLOADED, WEARS UNEVENLY

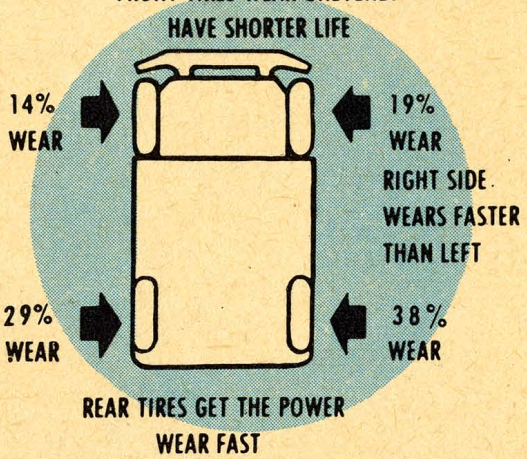


ROTATING TIRES (INCLUDING SPARE) AROUND VEHICLE EVERY 6000 MILES MEANS MORE TIRE MILEAGE . . .

WHEN YOU ROTATE TIRES VEHICLE GOES 15,000 MILES

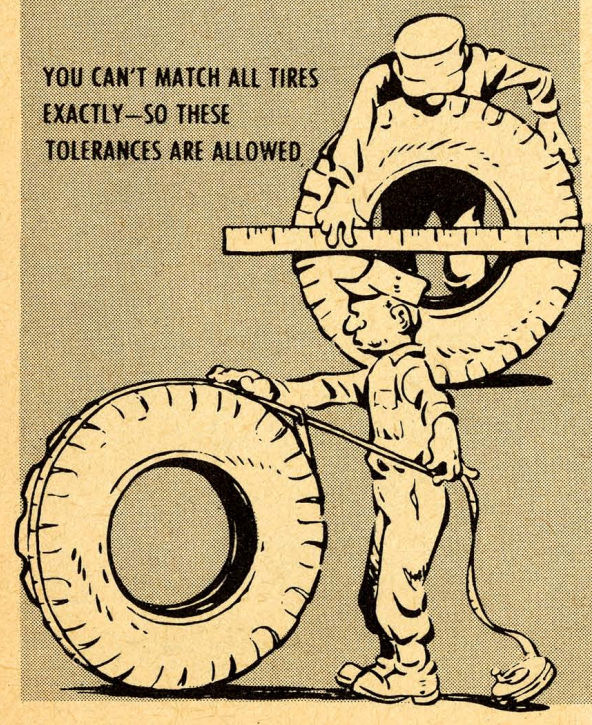
BUT YOUR TIRES GO ONLY 12,000 MILES

FRONT TIRES WEAR UNEVENLY HAVE SHORTER LIFE



REAR TIRES GET THE POWER WEAR FAST

YOU CAN'T MATCH ALL TIRES EXACTLY—SO THESE TOLERANCES ARE ALLOWED

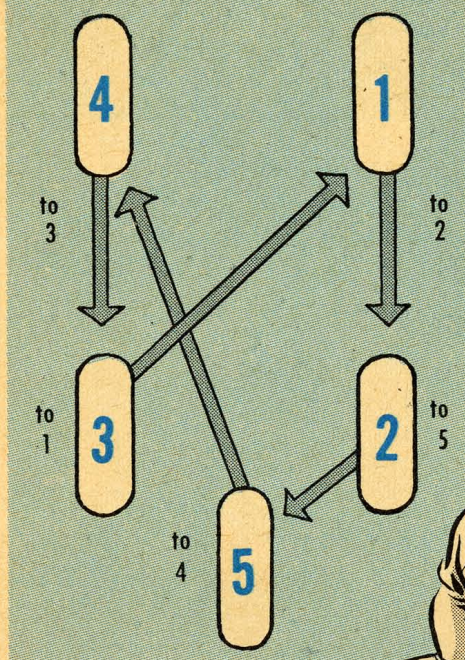


OUTSIDE DIAMETER OF TIRES	PERMISSIBLE DIFFERENCE	
	IN DIAMETER	IN CIRCUMFERENCE
UNDER 30"	1/4"	3/4"
FROM 30" TO 40"	3/8"	1 1/8"
OVER 40"	1/2"	1 1/2"

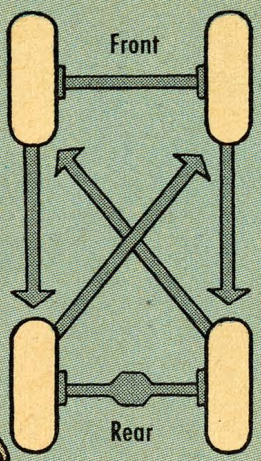
BE SURE TO MOUNT THE LARGER TIRE OUTSIDE

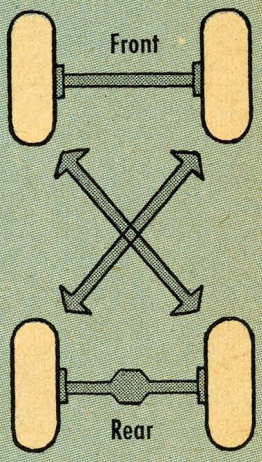
OKAY—YOU KNOW TIRES SHOULD BE ROTATED, HERE GOES . . .

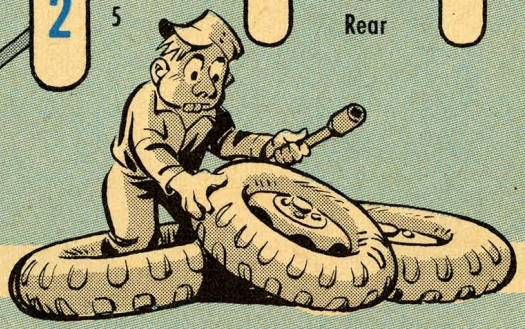
4x4 or 4x2 with spare



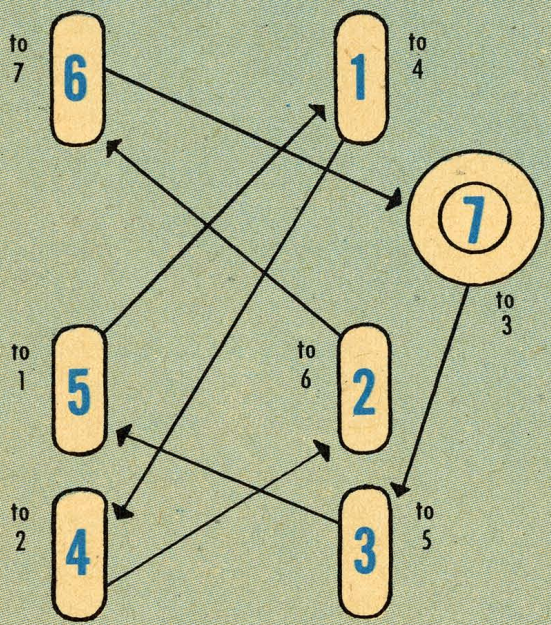
4x4 or 4x2 without spare . . . use either system



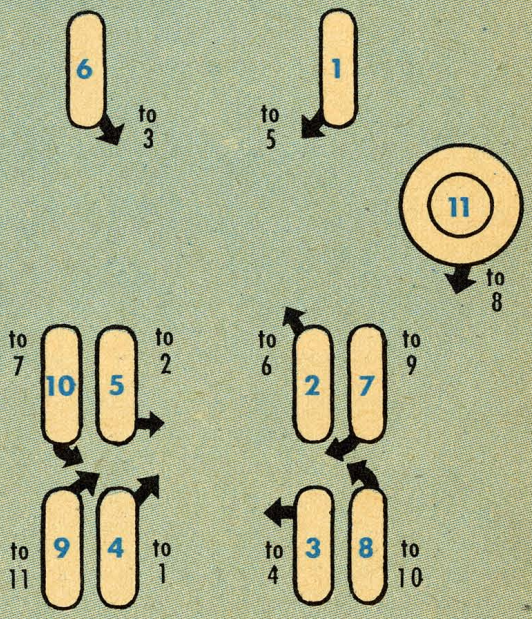


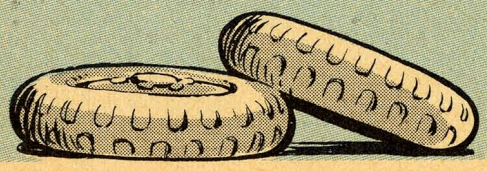


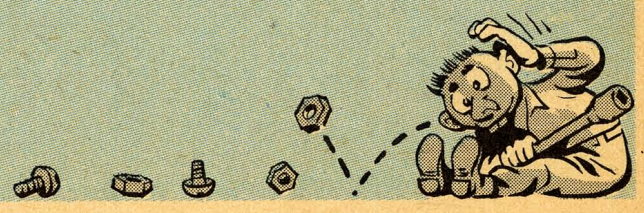
6x6 single wheel vehicle



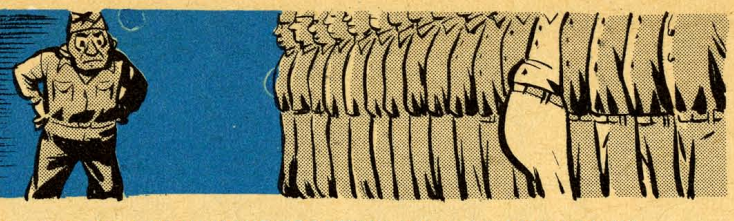
6x6 dual wheel vehicle



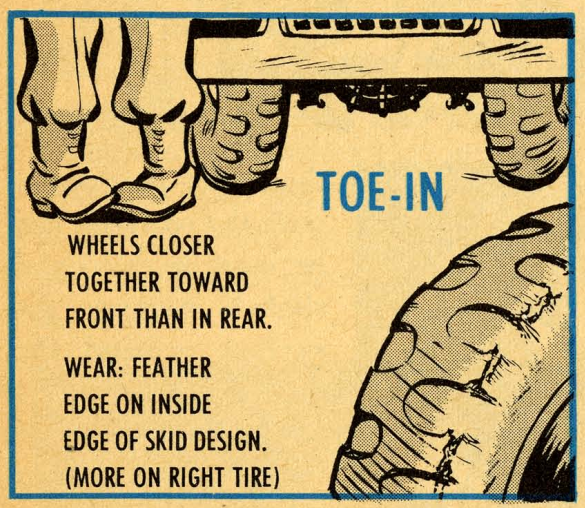




ALINEMENT VS. TIRES



SIGNS OF TIRE WEAR MAY TIP YOU OFF AS TO HOW YOUR FRONT WHEELS ARE OUT OF LINE



TOE-IN

WHEELS CLOSER TOGETHER TOWARD FRONT THAN IN REAR.

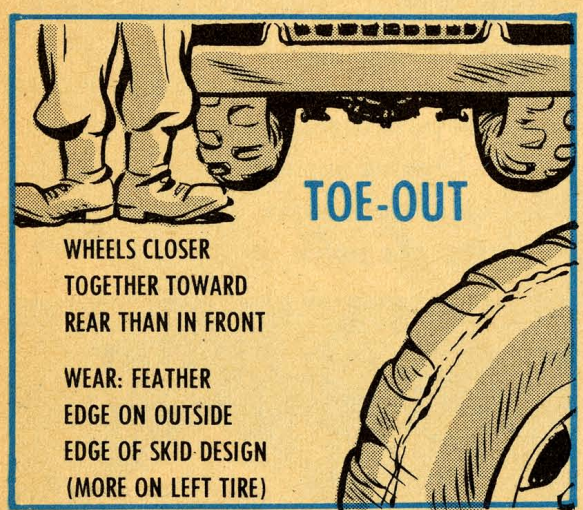
WEAR: FEATHER EDGE ON INSIDE EDGE OF SKID DESIGN. (MORE ON RIGHT TIRE)

IF YOUR TIRES ARE WEARING ON THE OUTSIDE—

OR WEARING ON THE INSIDE

OR IF YOUR TRUCK'S HARD TO STEER —

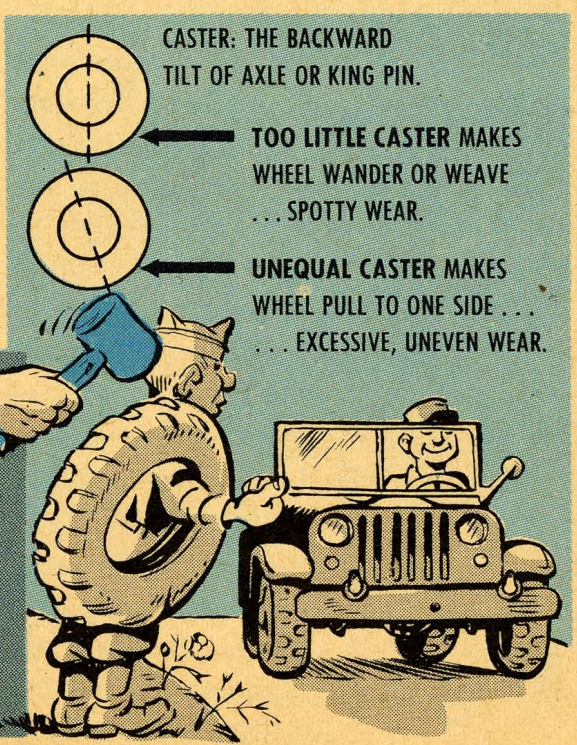
—GET HER IN TO YOUR ORDNANCE REPAIRMAN.



TOE-OUT

WHEELS CLOSER TOGETHER TOWARD REAR THAN IN FRONT

WEAR: FEATHER EDGE ON OUTSIDE EDGE OF SKID DESIGN (MORE ON LEFT TIRE)



CASTER: THE BACKWARD TILT OF AXLE OR KING PIN.

TOO LITTLE CASTER MAKES WHEEL WANDER OR WEAVE . . . SPOTTY WEAR.

UNEQUAL CASTER MAKES WHEEL PULL TO ONE SIDE . . . . . EXCESSIVE, UNEVEN WEAR.

REMEMBER

A TIRE'S NO BETTER THAN A DRIVER'S HABITS.

POOR DRIVING HABITS SHORTEN A TIRE'S LIFE.

GOOD DRIVING HABITS WILL DO MUCH TO SAVE RUBBER.

HERE'S THE HOTTEST ON HOT PATCHES

Did'ja ever patch a hole in your bicycle tire? Or give your old jalopy's tire first aid? If you did—and could afford more than rubber bands, chewing-gum and molasses—you probably cold-patched it. Which means tacking a rubber bandage over the puncture with cement.

But better still would be to vulcanize it with a rubber patch and heat, so that the patch's rubber and the tube would melt together into a solid bond.

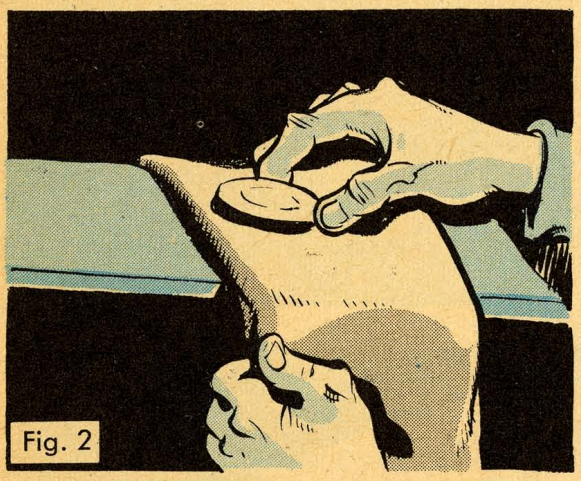
A hot patch kit (Ordnance Stock No. H014-0520829) has patches up to 2⅜" diameter for this purpose; other and larger patches can be requisitioned separately. You'll find each patch covered with a combustible fire pad and surrounded by a metal cup. The cup's lip is held down with a hot-patch clamp while the heat's applied to the pad.

To make a hot patch that'll last, first make sure the area around the opening's cleaned and buffed (Fig. 1). A real dirty tube needs soap and water or a solvent. But skip the gasoline—it's bad on rubber. Otherwise, the buffer that comes with the patch kit can be used to clean and slightly roughen the surface around the tear. Then, when it's dry, blow away the chips and keep that tube free from dirt or grease.

When you're patching tears or cuts (not just punctures), take a pair of scissors and round out the ends. Because if you don't, the tear or cut may spread even after the patch-up.

YOU'VE PUT THE FINGER ON IT WHEN YOU'VE CLEANED AND BUFFED THE AREA AROUND THE PUNCTURE.

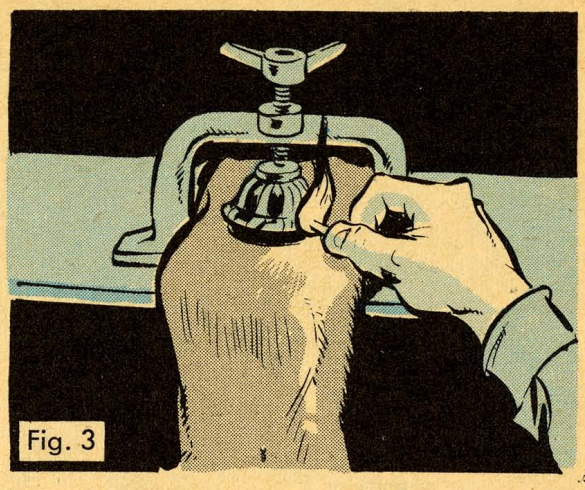
Now to patch . . . First, you put the buffed tube on the table in the hot-patch clamp. Then, snatch a patch that's big enough to reach at least an inch in all directions from the puncture, and pull off its protective covering. A pinhole puncture'll take the smallest patch in the kit.



WITH THE TUBE ON THE TABLE AND THE PATCH IN PLACE, YOU'VE SET THE STAGE FOR A HOT FINISH.

Stack the patch over the hole (Fig. 2) and bring down the clamp. Everything set? Good. Now lock the clamp and run down the clamp screw to hold the patch firmly in place—hand tight.

Comes the trickiest part of the operation. It looks so easy you'd think a kindergarten kid could do it with one hand tied behind his back. And it **is** easy—but you have to do it **right.** When you're sure the patch's fire pad is clean and dry, lift up the pad's edge a bit with a knife-point, and set a match to it. Let 'er burn all the way. Only a complete burning job will solidly vulcanize that patch (Fig. 3).



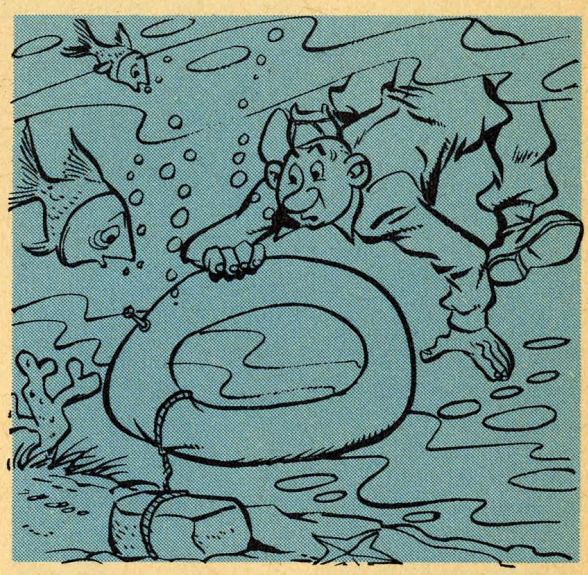
IT'S CURED FOR GOOD—IF THE PAD BURNS ALL THE WAY AND ISN'T TOUCHED FOR FIFTEEN MINUTES.

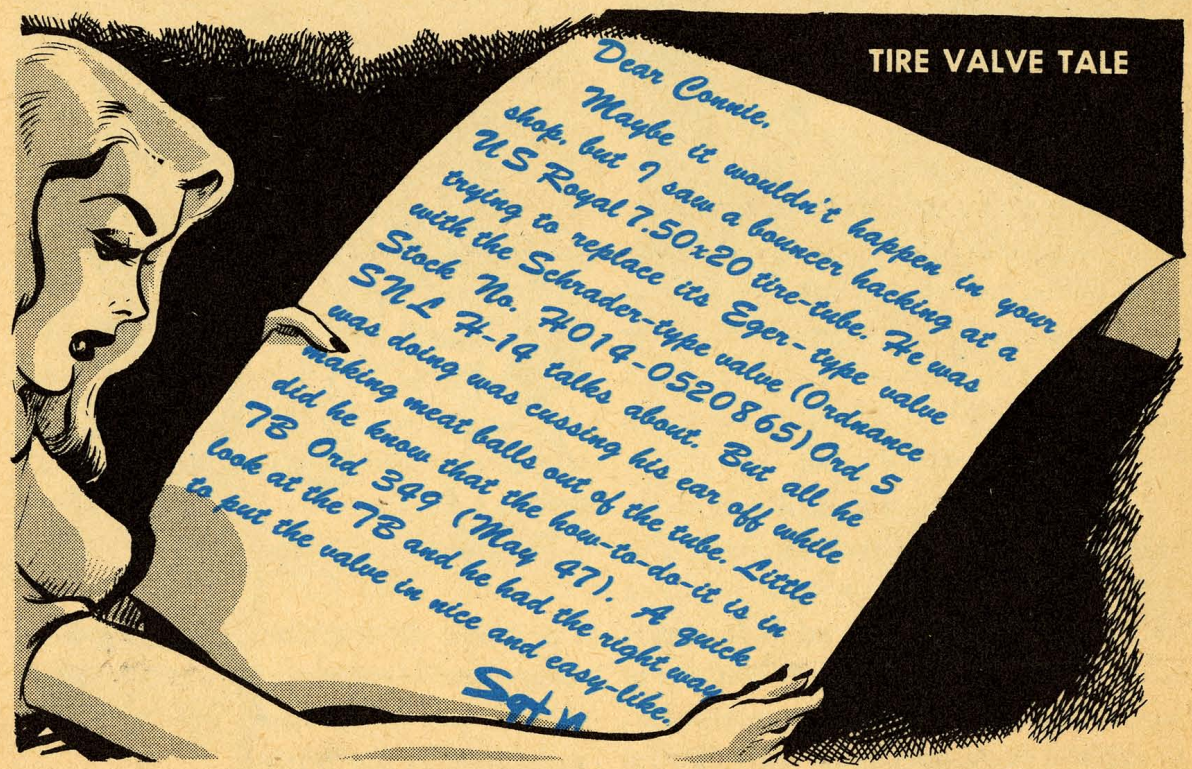
After 15 minutes, the metal cup should be cool enough to touch. And this is important—it takes that long for the patch to cure in place. So keep your mitts off.

Now take off the clamp, sprinkle some soapstone (Ordnance Stock No. 51-T-4340) on the patched area, and the tube's ready for testing.

If you have trouble rustling up some soapstone, talcum powder will do. Sprinkle some on the tube and in the casing—that's the best way to make sure the tube'll slip into position easily in the casing when the tire's inflated.

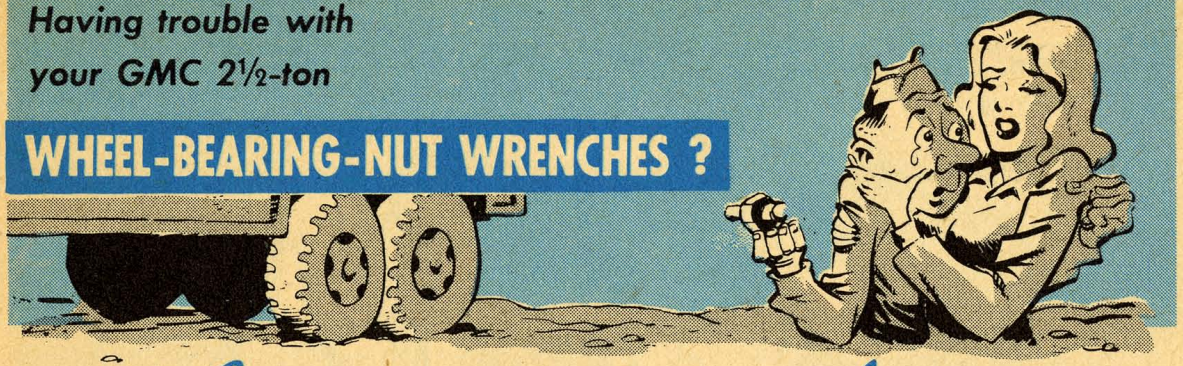
The best way for you to test for a leak is to blow the tube up to roundness and dunk it in a tub of water. And when you're without water or a tub, spread some spit on the area and look for any bubbling. With bubbles you've got troubles—your patch didn't take. All you can do is scrape off as much of the patch as you can, without damaging the tube, and start all over again. But if it checks OK, it's ready for use.





Having trouble with your GMC 2½-ton

WHEEL-BEARING-NUT WRENCHES ?



Connie suspects you may not be too happy with 'em, for a coupla reasons.

First, there's just enough to go around —no extras to be used as paper weights. Then, when you've finally latched onto one of these persuaders, y'find the tubular pilot's been made a shade too small for best results.

But your Ordnance support can fix that for you. Have them apply two bead welds completely around the circumference of the pilot (as in Fig. 1) to build up the undersized outside diameter.

Thickness of the bead should be about .025″ to .030″, which would increase the diameter of the tube by double that amount. Then, grind the bead down to the right dimensions, like in the sketch. And that'll take out the wobble.

To keep everything straight, you see that the manufacturer's numbers stamped on the wrenches are changed like this:

Front wheel wrench

From 7950169 to 8390299

Rear wheel wrench

From 7950690 to 8390302

Then you've got wot the doctor ordered.

So, take yours around for the fix. And, if you're just now ordering one of these knuckle-busters from supply, take care to get the stock numbers straight. It's Ordnance Stock No. 41-W-3825-66 for the front wheels and Ordnance Stock No. 41-W-3825-140 for the rear.

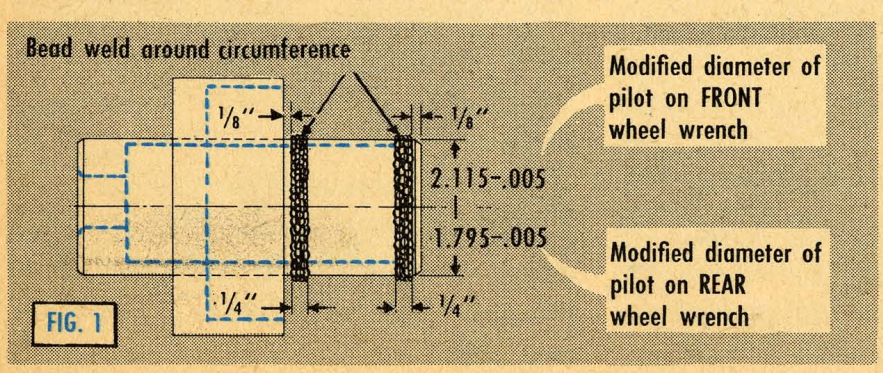
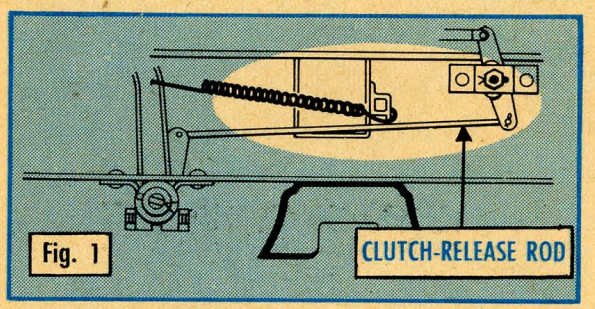


FIG. 1

Take a squint at your Jeep clutch-release rod

Dusty, sandy country puts lots of wear and tear on your M38. Dirt crawls between movable parts and bites and gnaws at the joints. Besides double-checking for cleanliness, and lubricating regularly, you've got to spot those wearing parts and replace the important ones before they come apart.



The M38's clutch-release rod (Ordnance Stock No. G740-7372826) is one such part. It's a simple link, bent at each end to pass through an eye in the levers, and held by cotter keys. And, while the rod will wear under all conditions, it's hardest hit where the good earth's flying 'round (Fig. 1).

Best idea is for you to replace the worn rod before it goes. It'll take you only a few minutes. But if you let it snap first, it could jump the clutch throwout-mechanism's insides off its ball pivot and into the pressure plate assembly. And a new assembly is nothing to sneeze at—or foul out.

Make sure those ball joints get lubed. Keep your eye on the rod, and replace it early. The eyes in worn operating levers can be welded and redrilled if necessary —but get it done before it breaks and knocks the guts out of the assembly.

Slow down to shift down

Around the medium tank family there seems to be a goodly argument going on about the safe top speed at which you can downshift an Allison CD-850 transmission. Some TM's say 7-mph, some say 11.

Best idea we know of is to slow **way way** down before you shift down. Your engine and transmission can pull you along, no matter how slow you are going when you make the shift. But it takes an Ordnance outfit to put in a new transmission if you shift it too soon.

In particular, you guys in M48's and the new T43's, **seven miles an hour** is plenty—or slow down even more 'cause the slower your speed is at shift-down, the longer the transmission lasts.

Let's get a li'l tight

In the fan belts, that is.

The fan drive-belts on the 5-ton IHC trucks stand accused of slipping on the fan pulley sometimes.

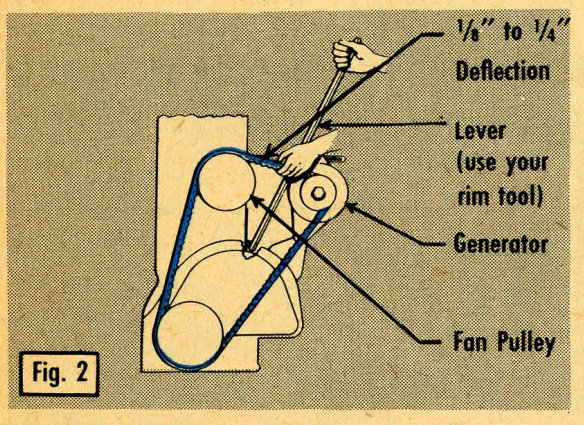
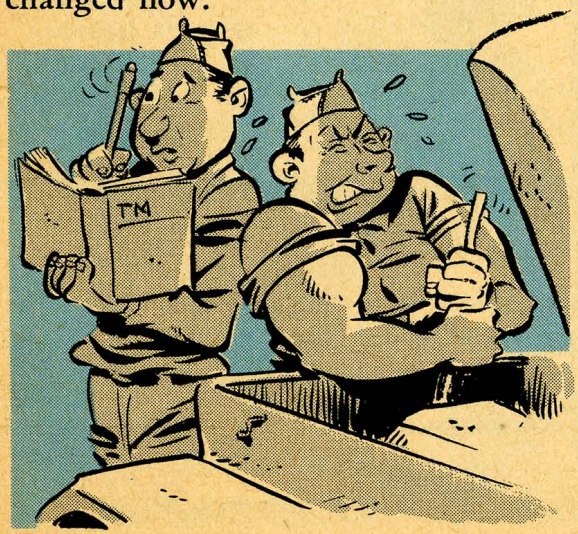


Fig. 2

TM 9-837, page 146, para 118b, calls for ½" deflection under light pressure between the generator and the water pump. Change 1 to this TM calls for a muscle-tight adjustment (70 to 90 pound pull). Both of these are being changed now.

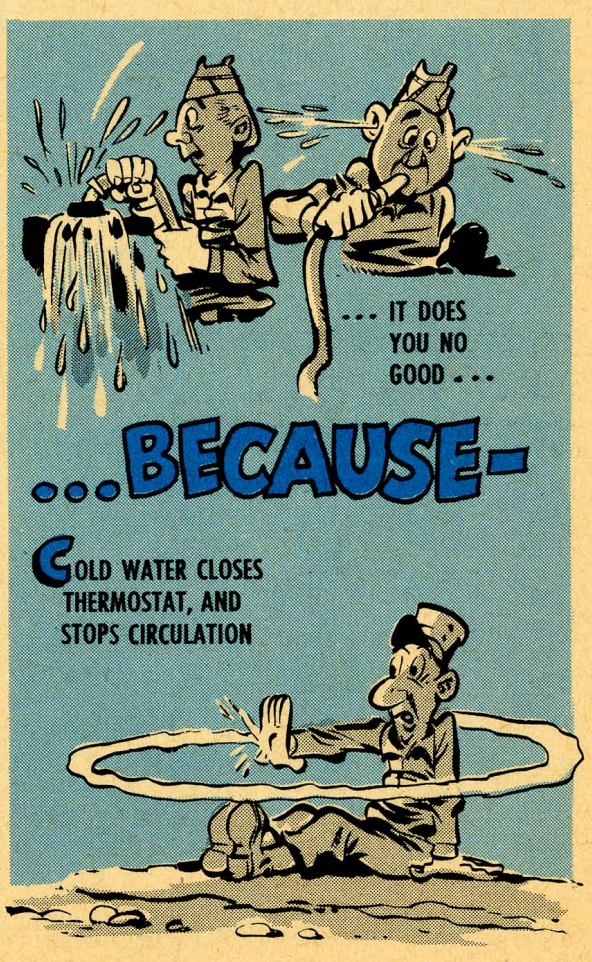


The right way is to adjust those belts for ⅛" to ¼" deflection under light pressure between the generator and the fan water-pump-pulley (Fig. 2). And in case you're inclined to ask, this tightness does apply to the cog-type belts.

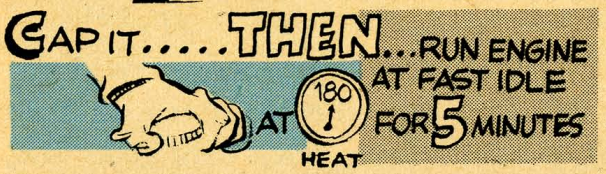
Watch the stretch on new belts. You'll readjust them for sure after about 75 to 100 miles. It's a darn good idea, anyway, to keep checking those belts right frequently.

Water purge

The man who flushes his cooling system by shoving a running water-hose in the radiator, with or without the engine running, is pouring the job down the drain.



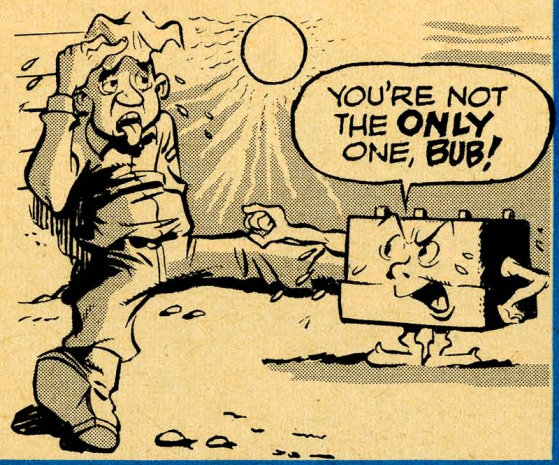
The royal flush that beats this flush is to drain the system, close the radiator's petcock, and fill it with clean fresh water.



After you've drained, flushed and refilled the cooling system this way, add a rust inhibitor (Ordnance Stock No. 51C-1588-775). Unless you're using antifreeze—which already has an inhibitor in it.

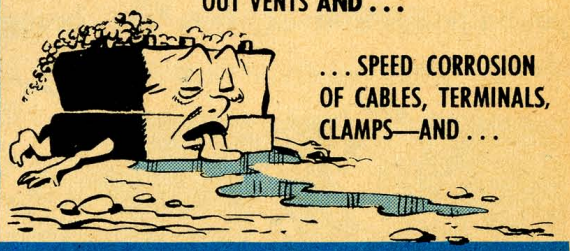
Hot tips for hot batteries

DURING DOG DAYS YOUR BATTERY NEEDS MORE FREQUENT CARE



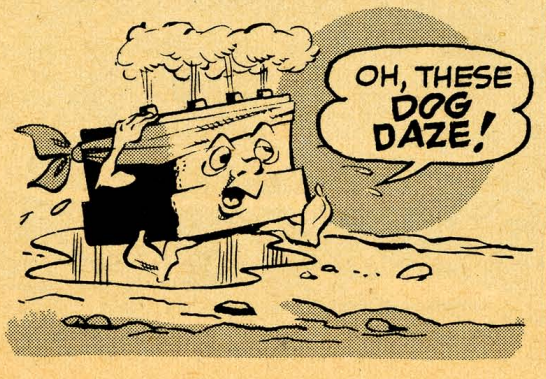
CHECK WATER LEVEL AT LEAST ONCE A WEEK...

TOO MUCH WATER'LL BUBBLE OUT VENTS AND...



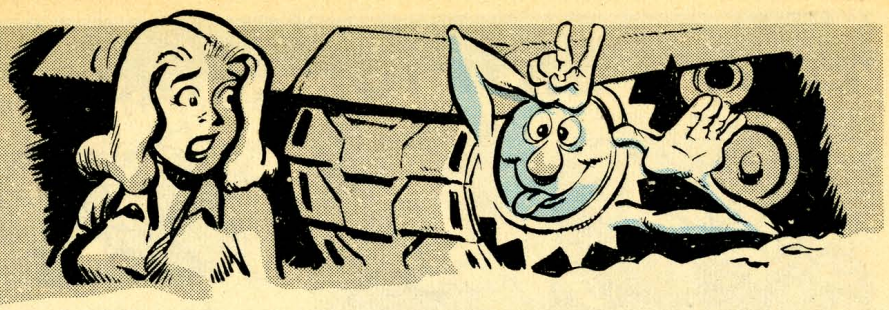
...SPEED CORROSION OF CABLES, TERMINALS, CLAMPS—AND...

SINCE IT'S WORKING AT HIGHER TEMPERATURES, THE WATER (ELECTROLYTE) IN THE CELL BOILS OR EVAPORATES FASTER



BRING AN EARLY END

DOPEY FINAL DRIVES



The right ring assembly

Right now, while you got nothin' better to do than grind more dust inta the well-worn seat of them grease-stained britches of yours—get off your big fat chair and take a look at some different final drives for your M48 tank. You'll need help from your Ordnance support unit.

What'cha lookin' for? Just this—you're makin' sure that you just use Ring Assembly, quick disconnect, input shaft, the one covered by Ordnance Stock No. G254-8365023. If it has the screw-type retainer pin, it's the **new** type and you're OK.

Here's what'cha don't want. Take a look at the old type assembly, Ordnance Stock No. G256-7379226, in Fig. 10-2 in Ord 9 SNL G-254. That's the one you **don't** want.

Why? 'Cause there's a chance that the old type **could** come unlocked while you're operating. When the input shaft slips out of engagement, your power's gone, your control's gone . . . and where are you goin'? You can't even stop going. You stomp the brakes and off to the side you swing, but good.

So like we said, pal—**look**—and make sure.

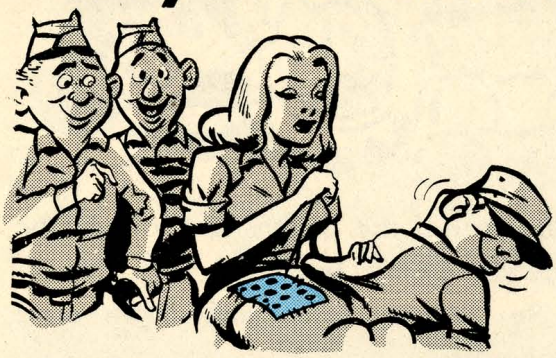
Match em... Don't mix 'em

It's the best advice yet on M47 and M48 tank final drives. This includes the gears and the carriers and covers.

The two halves of the final-drive housing are mated by the manufacturer. When you start mixing the carrier from one with the cover from another, you throw things out of alinement—and then you get gear trouble. So when Ordnance pulls the power plant to replace the whole final-drive assembly, remind 'em to match 'em.

The bull gear and the pinion gear, which you were able to get separately, are going out of the picture. They come in sets now. Try Ordnance Stock No. G262-8689039 for M47 final-drive gears; and Ordnance Stock No. G254-8705731 for the M48 gears. They should be replaced in sets only—otherwise they'll be chewing on each other.

Easy Patch for Leaks



How to put a good, strong patch on Gas Tanks, Intake Manifolds, Radiators, or any old hole.

Now you can patch even that leaking gas tank without removing it from the vehicle. It's true . . . most any patch job is lots less work with the new repair kit (Ordnance Stock No. T52-C-3259-50). It's been used by the Air Force, and in Ordnance tests the patch jobs were still holding gas after a few thousand miles of operation. It's a tough patch.

The kit comes to you with the sealing material in two jars—one a white-colored sealer and the other a brown paste called the "accelerator." The secret of a long-lasting seal is in mixing these two things together, thoroughly, and then in spreading the combination on a really clean surface.

How To Get Ready

Mix Well, Please

SPREAD IT ON

When you get a smooth, even color in the jar, the stuff is ready to apply. (If you're patching a gas tank, you'll have the gas drained below the level of the crack and no pressure in the tank.)

Spread the sealer on heavy, about 3/16″ to 1/4″ thick. Spread it about two inches out from the crack, all the way around (Fig. 1). And, if the crack's in a weld, be especially sure to spread the stuff along the weld since you can't always see where she stopped cracking.

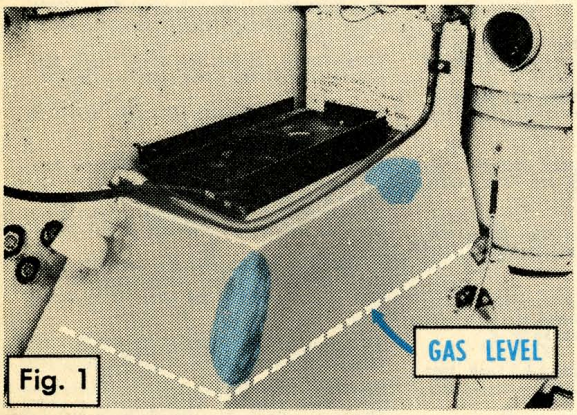
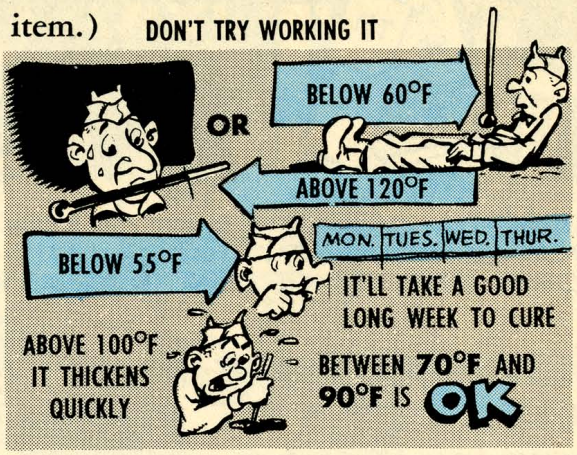


Fig. 1

Then, you let it dry. Use the chart in Fig. 2 for your drying time. (The "Pot Life" column is the length of time the sealer stays soft enough to spread **after** it's mixed . . . "Curing Time" is the time to be allowed **before** using the sealed item.)

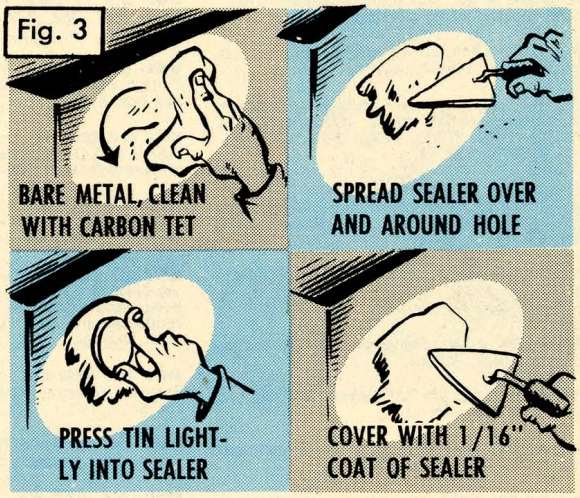
SURROUNDING AIR TEMP.	POT LIFE	APPROX. CURING TIME
50° F	6-8 hrs	8 days
60° F	5-6 hrs	4 days
70° F	3-4 hrs	48 hrs
80° F	2-3 hrs	24 hrs
90° F	1 - ½ hrs	12 hrs
100° F	30-45 minutes	8 hrs

Fig. 2



BIGGER HOLES

When you're patching a crack that's wider than about 1/8″, it's safer to reinforce the patch with a strip of **clean** canvas or fiberglass tape. And for a hole that's really a hole, use something that's a little more sturdy—like the top of a tin can, maybe.



When you're using a reinforcement, first spread the sealer about 3/16″ to 1/4″ thick, over and around the opening. Then imbed the reinforcement in the sealer (Fig. 3). Cover the whole thing with about 1/16″ coat of sealer. Then let it dry according to your time and temperature table.

HERE'S A COMPLETE LIST OF NEW OFFICIAL PUBLICATIONS ON ORDNANCE EQUIPMENT WHICH WERE RELEASED DURING THE THIRTY DAYS BEFORE PRESS TIME FOR THIS ISSUE OF PS MAGAZINE.

SNL'S

Ord 7 SNL A-59, Gun, machine, cal. .50, M2, HB, turret type, Feb 54

Ord 7-8 SNL A-86, Mount, tripod, weapon, M74, Feb 54

Ord 8 SNL B-39, Launcher, grenade, M1, M7, M7A1, M7A2, M7A3, and M8, Mar 54

Ord 7 SNL C-21, Howitzer, 105-mm, M2A1: carriage, howitzer, 105-mm, M2A2, Feb 54

Ord 9 SNL D-48, Vol 3, Mount, gun, antiaircraft, 75-mm, T69, Feb 54

Ord 9 SNL D-63, Howitzer, 155-mm, M45 (T186E1), Jan 54

Ord 9 SNL F-323, Mount, telescope, M79, Feb 54

Ord 9 SNL F-358, Mount, periscope, M88, M89, M93 (T176E1), T176E2 and M94 (T177E2), Jan 54

Ord 9 SNL G-163, Carriage, motor, 76-mm gun, M18; vehicle, utility, armored, M39, Jan 54

Ord 9 SNL G-249, Vol 11, Winterization kit for truck, cargo, 1½-ton, 4x4, Feb 54

Ord 8 SNL G-716, Power Unit (Willys engine: Signal Corps models PU26U, PU26A/U, PU58G, PE95F, PE95G, PE95H, PE95K, PU107U, PE182, and PE183A), Feb 54

Ord 7-8 SNL G-747, Trailer, cargo, ¼-ton, 2-wheel, M100; Trailer, telephone cable splicer, ¼-ton, 2-wheel (Signal Corps Model K38B), Dec 53

Ord 7-8 SNL G-754, Trailers, 1½-ton, M102A1, M103A1, M104, M104A1, M105A1, M106, M106A1, M107A1, Jan 54

Ord 8 SNL G-780, Power Unit, Willys engine (Model CJ-3A), Feb 54

Ord 6 SNL J-16, Sec 50, Transmission, Allison series CD-850, Feb 54

Ord 7-8 SNL J-642, Fixture, binocular collimating (7573197), Jan 54

Ord 7-8 SNL J-703, Machine, brake and clutch plate relining, (40-M-3-170), Jan 54

Ord 7-8 SNL J-714, Power hammer 100 lb, 220 v, 60 cycle, 3 ph, (Little Giant), Jan 54

Ord 7-8 SNL J-718, Separator, paint sprayer, oil and water, w/one regulator (Gray Model 250-432) (40-S-1555), Feb 54

Ord 8 SNL L-9, Target, ground, fast-moving, M2, Feb 54

Ord 7 SNL Y-33, Launcher, rotary, aerial target, type A-2, Mar 54

Ord 7 SNL Y-38, Stand, universal, Model HS-2 and Cradle, target-handling, Feb 54

MWO'S

MWO Ord A55-W21, Cal. .50 AA machine gun mount (6580030), Providing a gun traveling lock, Feb 54

MWO Ord C73-W5, 57-mm Rifles M18A1 and T15E16: Modification of chamber fulcrum, Feb 54

MWO Ord F35-W1, Aiming post M10: to facilitate field replacement of broken point, Feb 54

MWO Ord F293-W1, Fuze setters M22 and M23: Installing stop pawl of improved design, Feb 54

MWO Ord F312-W3, Periscope mounts M66, M66C, M67, M68, M73, M83, and T116: Installing wiper, Feb 54

MWO Ord G251-W4, 76-mm Gun tanks M41 (T41E1) and T41E2: Reworking periscope stowage box, Feb 54

MWO Ord G260-W8, Tracked armored infantry vehicle M75 (T18E1): Installation of air-cleaner-oil-reservoir-latch cable, Feb 54

MWO Ord G251-W5, 76-mm gun Tank M41 (T41E1): Replacement of auxiliary engine support assemblies, Feb 54

MWO Ord G260-W12, Tracked armored infantry vehicle M75 (T18E1): Installation of fuel primer pump handle retaining latch; exhaust air-duct reinforcement; and exhaust-pipe reinforcement, Mar 54

MWO Ord G262-W14, 90-mm gun Tank M47: Removal of turret ventilating blower damper, Feb 54

MWO Ord G262-W15, 90-mm gun Tank M47: Installation, gunner's foot guard, Feb 54

MWO Ord G748-W1, ¾-ton cargo 2-wheel Trailer M101: Removal of shock absorber end-play, Feb 54

TB'S

TB Ord 552, Lacquer and its application, Feb 54

TB Ord 553, 155-mm Guns M2 and M2A1; 155-mm Howitzers M1, M1A1, and M45 (T186E1); 240-mm Howitzer M1; 8-inch Gun M1; and 8-inch Howitzers M2, M2A1, and T89: Use of gerdom and neoprene obturator gas check pads, Mar 54

TB Ord 554, Removal of flywheel housing drain plug, on M38, M37, M34, and 5-ton series trucks, Mar 54

TB 9-730-2, 76-mm gun Tank M41 (T41E1), T41E2: Rerouting of front bilge pump and radio terminal box cables, Feb 54

TB 9-804A-3, ¼-ton 4x4 utility Truck M38A1: Adustment of glove compartment door striker, Feb 54

TB 9-819A-14, 2½-ton 6x6 cargo Truck M135: Installation flywheel housing gaskets, Mar 54

TB 9-1804B-1, ¼-ton 4x4 utility Truck M38: Kingpin bearing-cap screw selection, Feb 54

TB 9-1955-1, Jato 14DS-1,000, Mk 4 Mod 2, Feb 54

TB 9-2855-27, Installation of personnel heater, closure kit for multiple gun motor carriages M16 and M16A1, combination gun motor carriage M15A1, and half-track personnel carriers M3 and M3A1 (12v) (SNL G-102), Jan 54

TB 9-6092-2, Antiaircraft fire control systems T33C, T33D, M33C, and M33D: Recording applied field changes on the record plate, Mar 54

TM'S

TM 9-2018, Ground signal projector M1A1; hand pyrotechnic projector M9; pyrotechnic pistol AN-M8; and pyrotechnic pistol mount M1, Feb 54

TM 9-3053, 105-mm Rifle M27 and 105-mm rifle mount M75, Mar 54

TM 9-6035, Telescope Mount T169E1, Mar 54

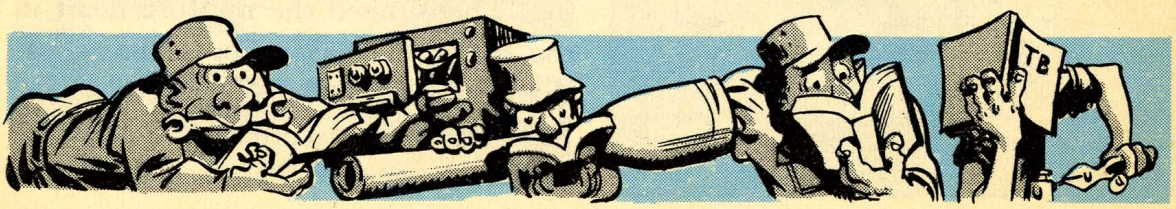
TM 9-7004, Self-propelled 155-mm howitzer T194, Jan 54

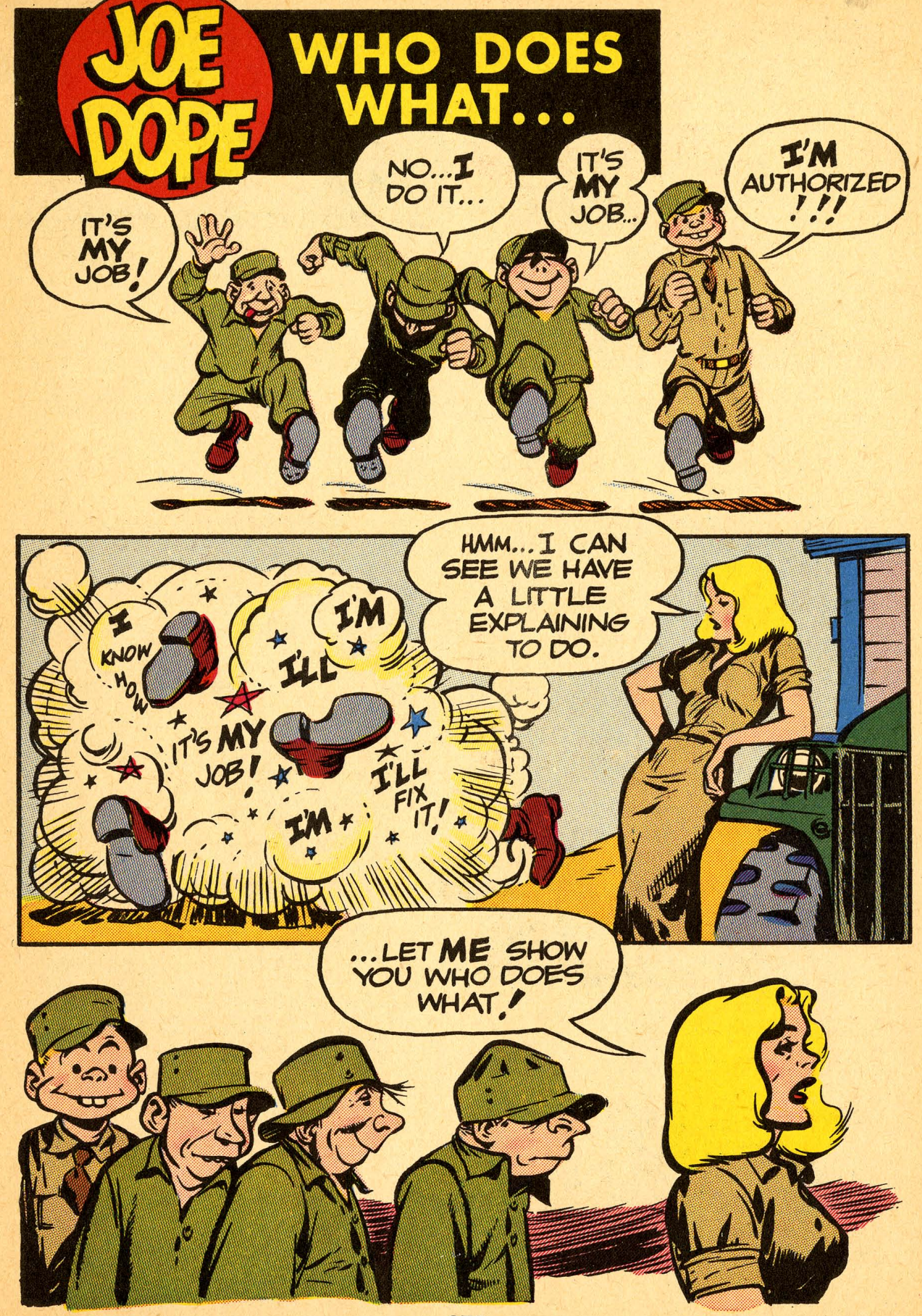
MISCELLANEOUS

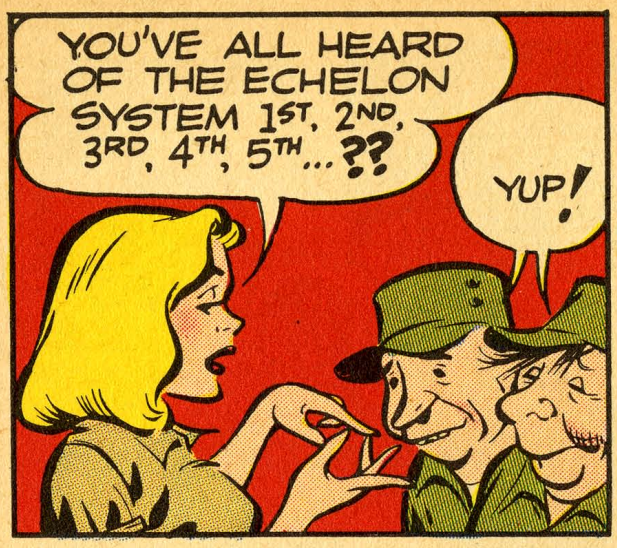
FT 90-N-0, (Abr) Gun, 90-mm, M36 and M41 firing, Shell, HE-T, T91, Shell, WP, T92, Shot, AP-T, T33E7, Shell, HEP-T, T142E3, Nov 53

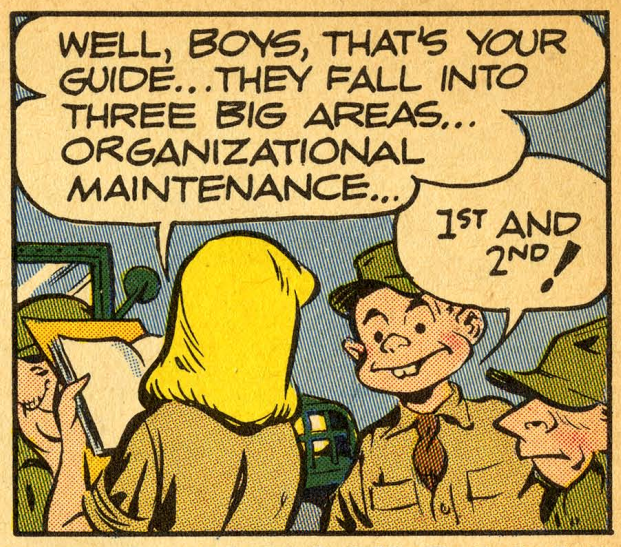
LO 9-3060, Launcher, 762-mm rocket (truck mounted) XM289, Jan 54

Ord 5-3-1, Major Items and major combinations, Mar 54




JOE DOPE
WHO DOES WHAT...
IT'S MY JOB!
NO...I DO IT...
IT'S MY JOB...
I'M AUTHORIZED!!!
I KNOW HOW
IT'S MY JOB!
I'M
I'LL
I'M
I'LL FIX IT!
HMM...I CAN SEE WE HAVE A LITTLE EXPLAINING TO DO.
...LET ME SHOW YOU WHO DOES WHAT!





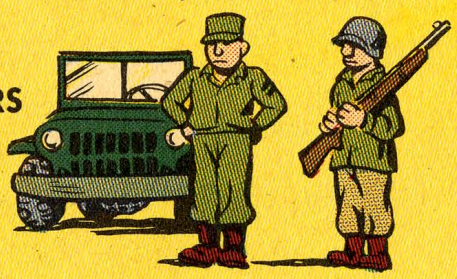
ORGANIZATIONAL

1ST ECHELON

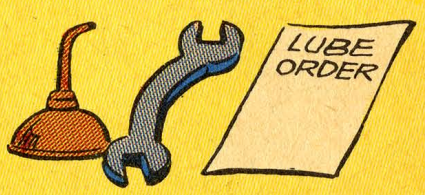
WHO

WHAT THEY DO

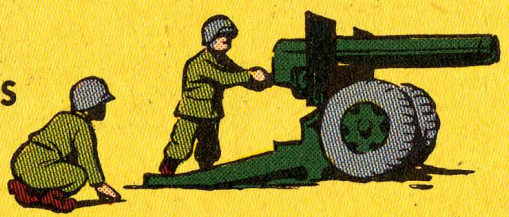
OPERATORS



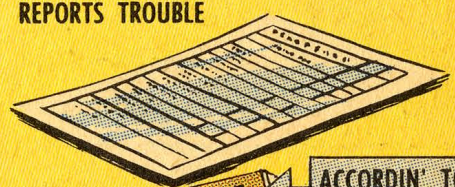
CHECKS, GREASES, LUBES, CLEANS



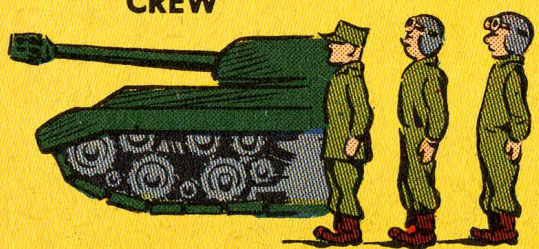
USERS

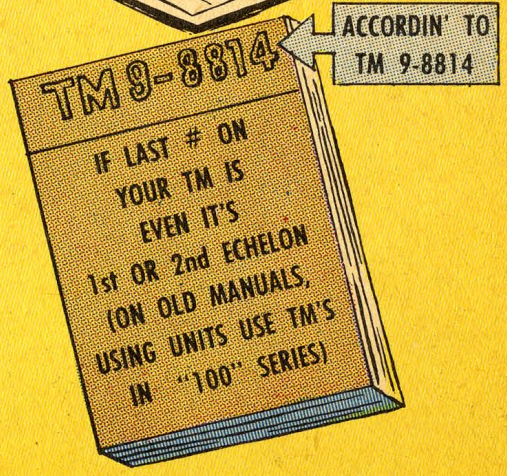


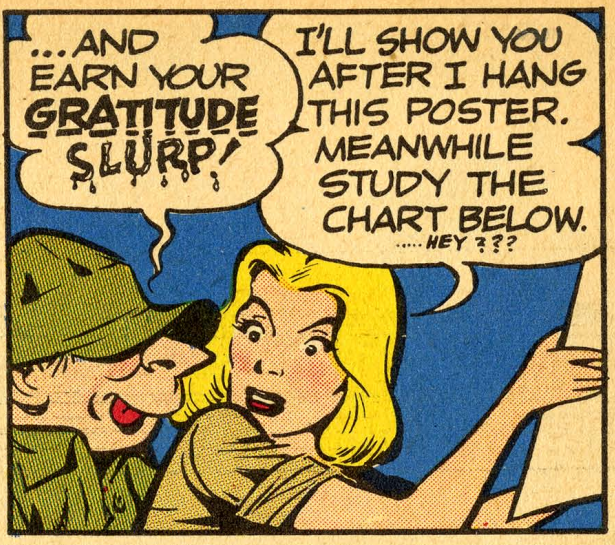
TIGHTENS, ADJUSTS
REPORTS TROUBLE



CREW







MAINTENANCE

2ND ECHELON

WHO

WHAT THEY DO

COMPANY MECH.

TEACH FIRST ECHELON MAINTENANCE TO OPERATORS

MOTOR POOL OFFICER

SPECIAL TECH'N.

TESTING AND FIXING ON THE SPOT BREAKDOWNS. REPLACES PARTS LISTED IN ORD. 7'S

ORD 7 CATALOG

FOR PARTS ALLOWED

1000 TO 6000 MILE CHECK

DRIVERS ASSIST

JOE'S Dope Sheet

Joe Dope was all
covered with gloom
'Cause his friend's TM
lowered the boom
They'd argued all night
As to who had the right
To do which, how, why,
and to whom.

WE HAVE THE WORLD'S BEST EQ

JOE'S Dope Sheet

Joe Dope was all
covered with gloom
'Cause his friend's TM
lowered the boom
They'd argued all night
As to who had the right
To do which, how, why,
and to whom.

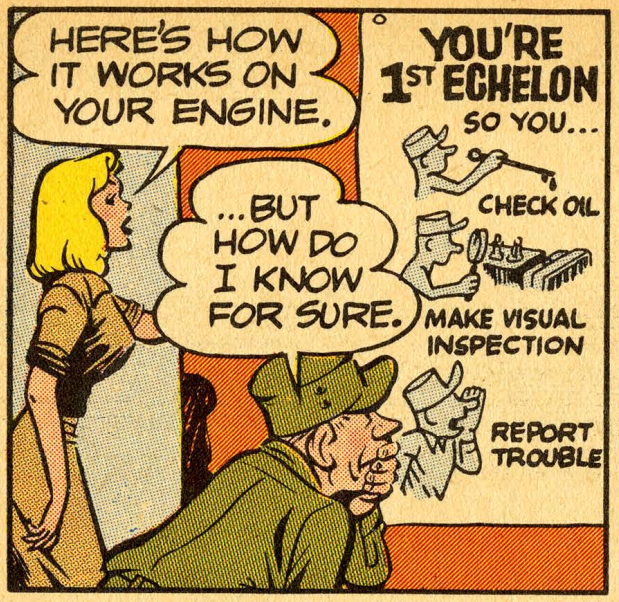
KNOW YOUR .....

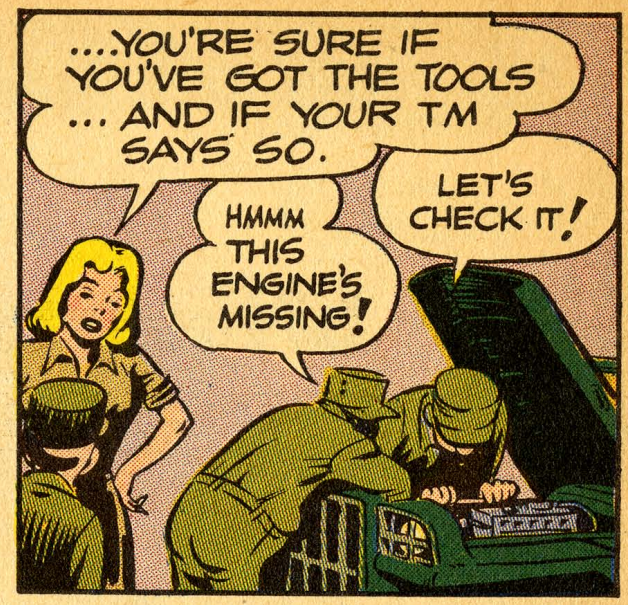
TM	SNL	T/O+E
DO YOU KNOW HOW DOES YOUR TM TELL YOU...	DOES YOUR ORD 7 SNL GIVE YOU THE.....	DOES YOUR T/O+E GIVE YOU THE NEEDED....
HOW? ☑ YES	PARTS? ☑ YES	TOOLS? ☑ YES

.....THEN IT'S YOUR JOB

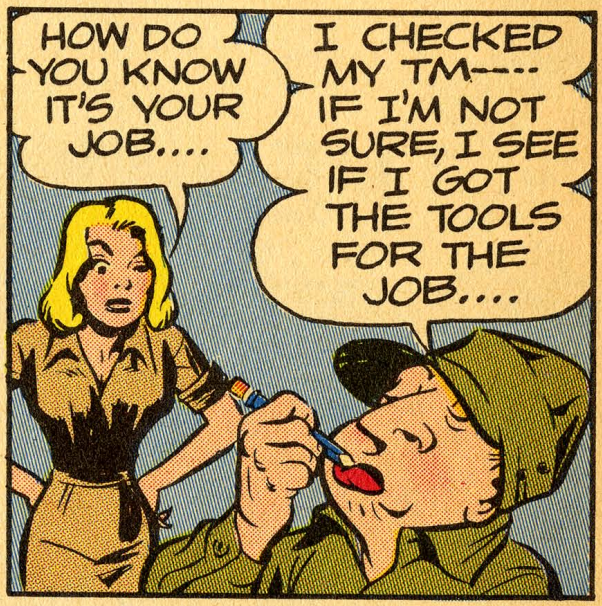
WE HAVE THE WORLD'S BEST EQUIPMENT... Take care of it

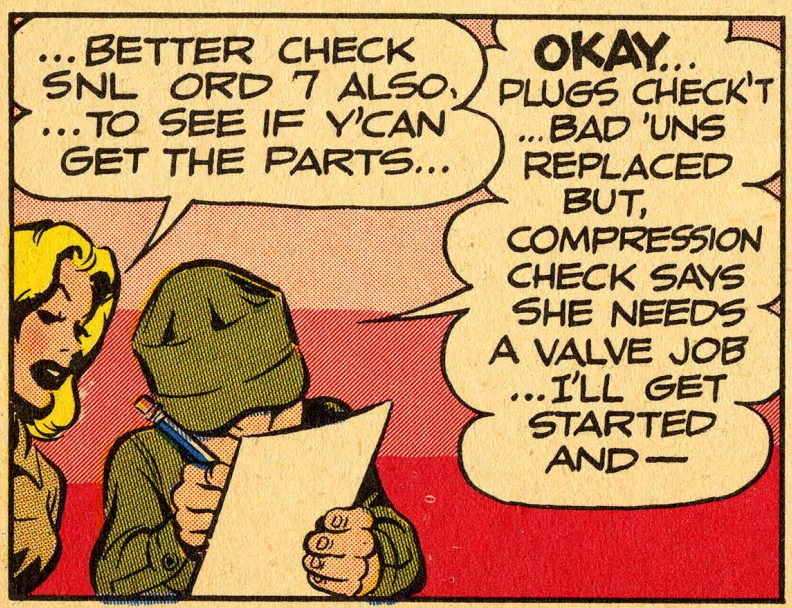
R.....
YOU...
SNL
DOES YOUR ORD 7 SNL GIVE YOU THE.....
PARTS?
YES
T/O+E
DOES YOUR T/O+E GIVE YOU THE NEEDED....
TOOLS?
YES
.....THEN IT'S YOUR JOB
TM 9-7[illegible]
TM 9[illegible]
TM 9[illegible]
UIPMENT...Take care of it


HERE'S HOW IT WORKS ON YOUR ENGINE.
...BUT HOW DO I KNOW FOR SURE.
YOU'RE 1ST ECHELON SO YOU...
CHECK OIL
MAKE VISUAL INSPECTION
REPORT TROUBLE

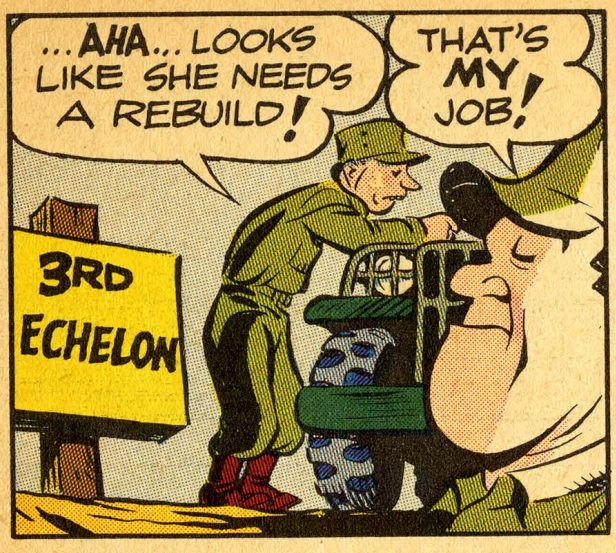

....YOU'RE SURE IF YOU'VE GOT THE TOOLS ... AND IF YOUR TM SAYS SO.
HMMM THIS ENGINE'S MISSING!
LET'S CHECK IT!

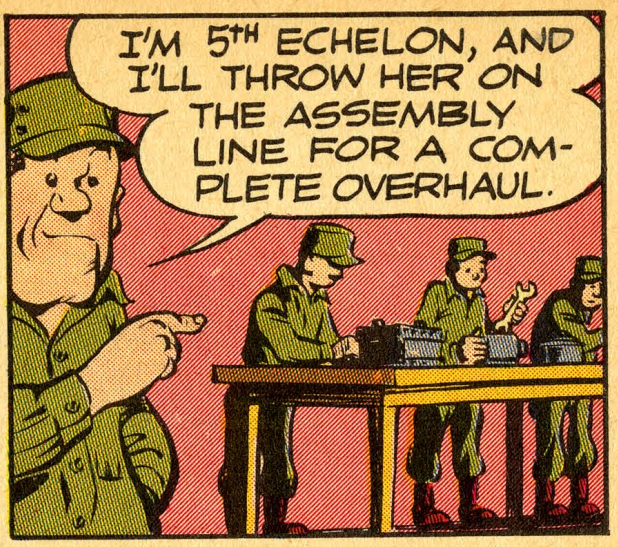
STOP!.. DO YOU HAVE THE TEST EQUIPMENT?
NO!
WELL I GOT 'EM I'M 2ND ECHELON


HOW DO YOU KNOW IT'S YOUR JOB....
I CHECKED MY TM---- IF I'M NOT SURE, I SEE IF I GOT THE TOOLS FOR THE JOB....


...BETTER CHECK SNL ORD 7 ALSO, ...TO SEE IF Y'CAN GET THE PARTS...
OKAY... PLUGS CHECK'T ...BAD 'UNS REPLACED BUT, COMPRESSION CHECK SAYS SHE NEEDS A VALVE JOB ...I'LL GET STARTED AND—

WHOA!! HAVE Y'GOT THE TOOLS AND DOES ORD 7 HAVE THE PARTS.
NO... I GUESS IT BELONGS TO THIRD ECHELON.



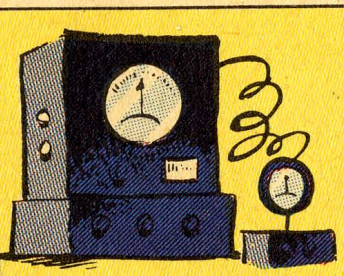


FIELD MAINTENANCE

HERE'S HOW IT ADDS UP IN MAINTENANCE!

3RD ECHELON —

MOSTLY DONE BY DIRECT SUPPORT OUTFITS OR POST ORDNANCE WHICH DISTRIBUTE GENERAL SUPPLIES.

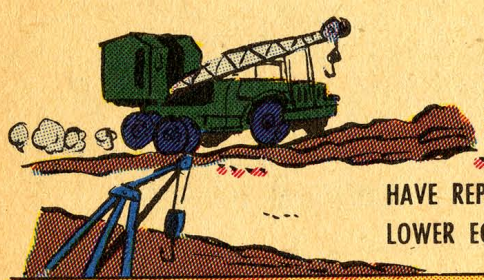


HAVE ASSEMBLIES AND SUB ASSEMBLIES

HAVE SPECIAL TESTING GEAR

REPAIR 'EM AND GET 'EM BACK FAST

4TH ECHELON — MOSTLY DONE BY HEAVY SUPPORT OUTFITS OR POST ORDNANCE WHICH **REPAIR FOR STOCK.**



BACK UP DIRECT SUPPORT SERVICES

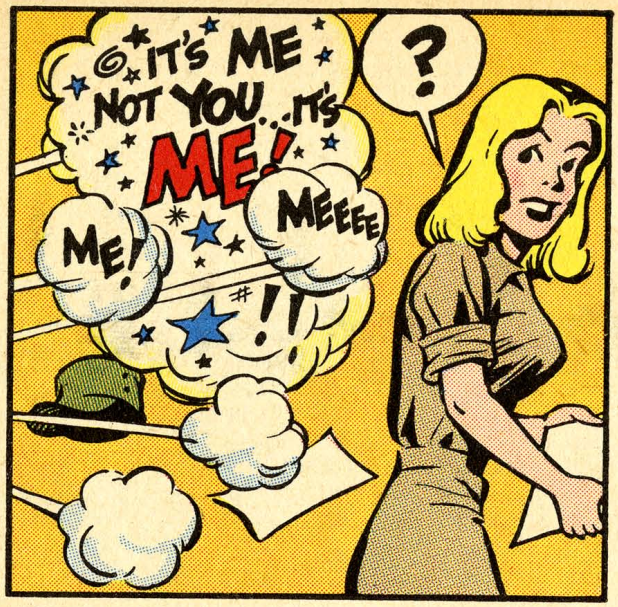
HAVE REPAIR EQUIPMENT LOWER ECHELONS LACK.

5TH ECHELON — (DEPOT MAINTENANCE)

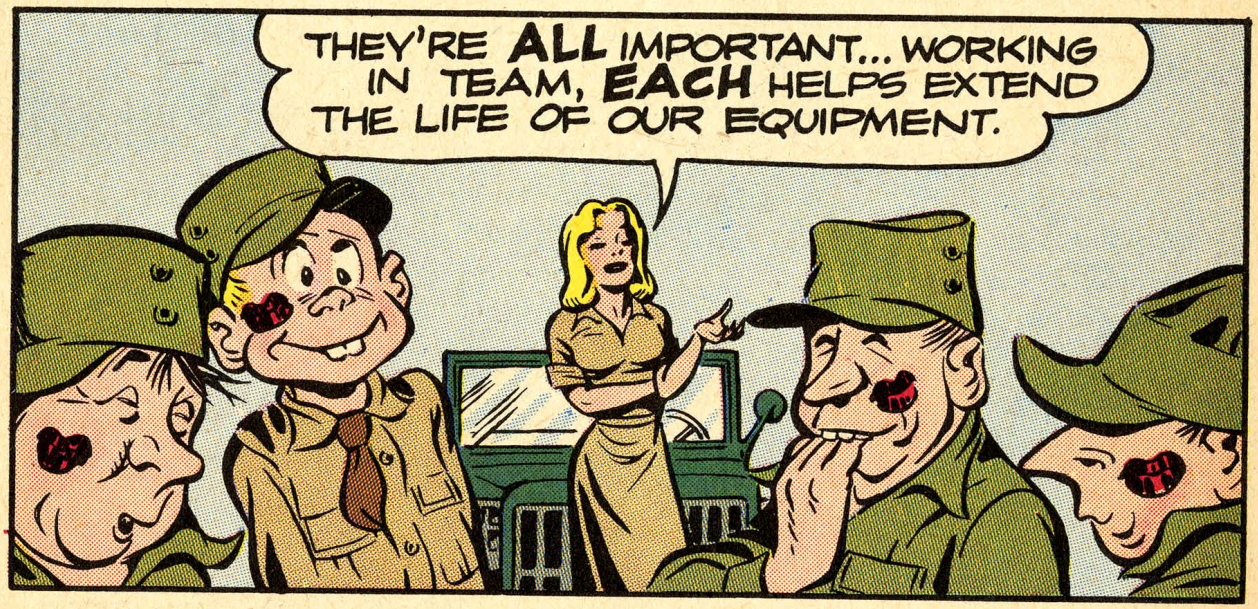
PERMANENT LOCATIONS

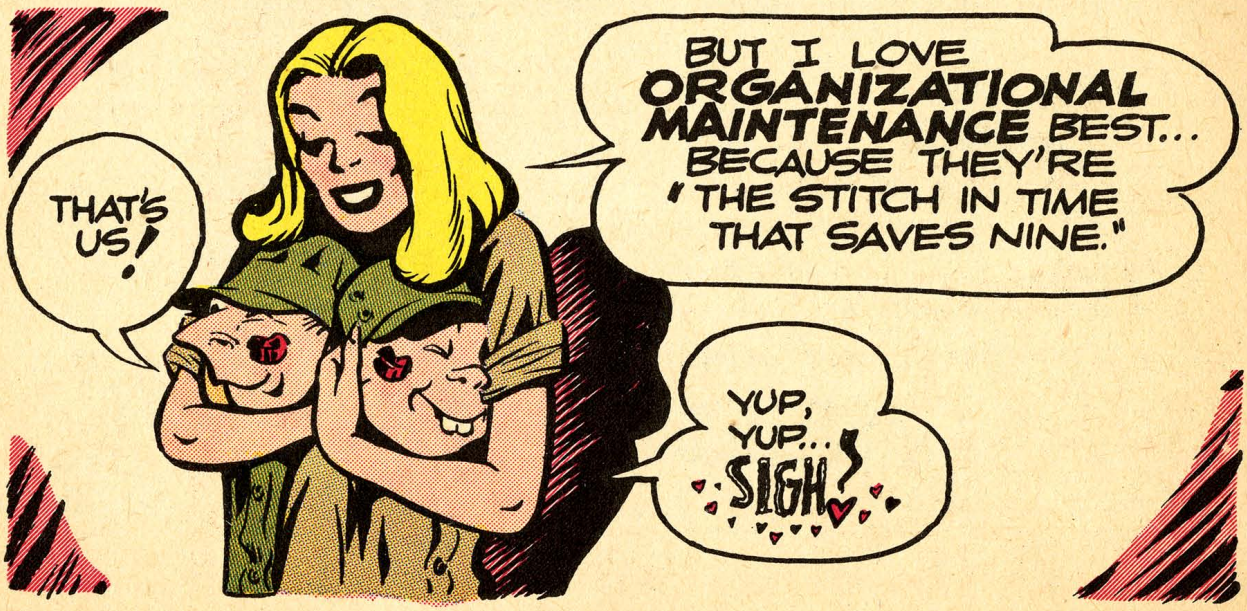
USES ASSEMBLY LINE WHEN AND WHERE POSSIBLE

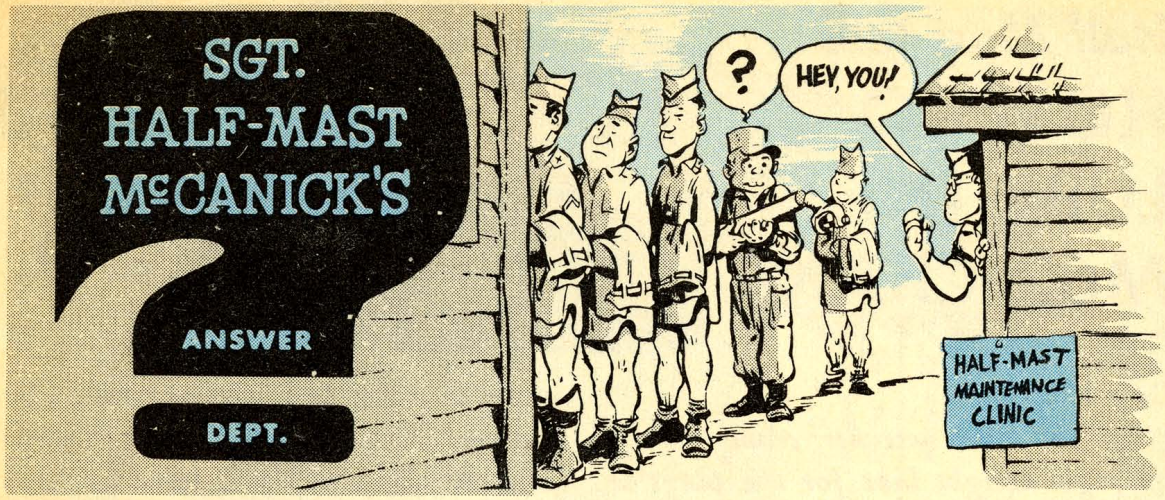
ECHELON · MAINT.	
1	PREVENTS
2	PREVENTS AND CURES
3	CURES
4	MAJOR CURES
5	COMPLETE OVERHAUL AND REBUILD


IT'S ME NOT YOU...IT'S ME!
ME!
MEEEE
?

ONE OF US EARNED YOUR UNDYING GRATITUDE.
YEAH, WHICH ECHELON IS MOST IMPORTANT ?


THEY'RE ALL IMPORTANT... WORKING IN TEAM, EACH HELPS EXTEND THE LIFE OF OUR EQUIPMENT.


THAT'S US!
BUT I LOVE ORGANIZATIONAL MAINTENANCE BEST... BECAUSE THEY'RE "THE STITCH IN TIME THAT SAVES NINE."
YUP, YUP... SIGH



MINERAL OIL DOSAGE?

Dear Half-Mast,

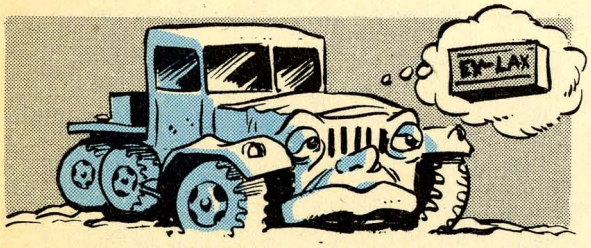
We're having trouble with our M52 tractor-truck—its brakes drag on all wheels. Somebody suggested putting mineral oil in with the hydraulic fluid. Do you think that would help?

Pvt P. P. D.

Dear Pvt P. P. D.,

Mineral oil may slide things down in you, but it'll constipate your brakes.

If you put the stuff in the hydraulic system, the brakes' cups will swell and before long your vehicle won't be able to move—or you get no brakes at all.



Try using clean hydraulic-brake fluid. And if that doesn't work, turn it over to Ordnance maintenance. Most likely the system needs reconditioning and the replacement of all cylinder cups.

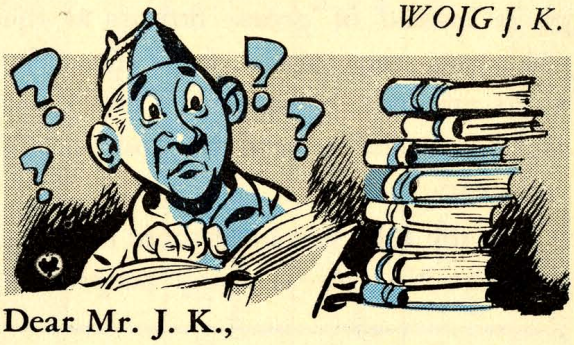
Half-Mast

GEE-SEVEN-FOUR-TWO

Dear Half-Mast,

It's always tough repairing a vehicle when there's no SNL on it. Right now I'm up against it on a 2½-ton, 6x6, M109 shop van body. Its window frames are busted and I can't find stock numbers and nomenclature to replace them.

WOJG J. K.



Dear Mr. J. K.,

The SNL for the M109 shop van body isn't out yet. But here're the stock numbers for its windows:

G742-7092396—Sash, front window, stationary, assy

G742-7092398—Sash, rear door, stationary, assy (left)

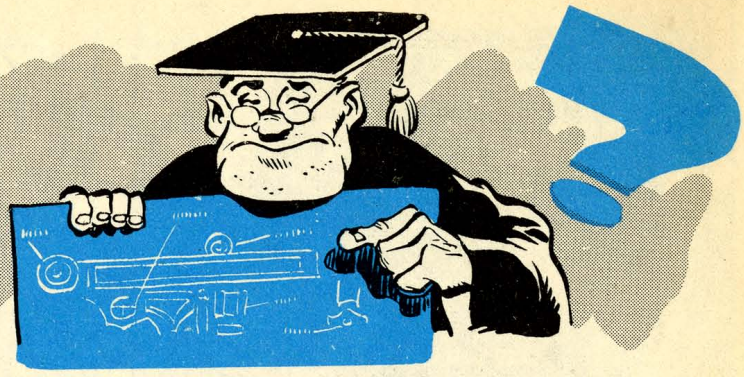
G742-7092397—Sash, rear door, stationary, assy (right)

G742-7092395—Sash, side window, assy.

Half-Mast

Half Mast tells . . .

HOW TO LUBE THE M62 CRANE



Dear Half-Mast,

On the M62 wrecker crane, what's the right weight lube for the plugs at the pivot-post ring? They don't look right for chassis grease, but No. 90 leaks under the housing gear like through a sieve. Hope you can put us straight here, as we don't seem to have any LO covering this.

Cpl. L. D.

Dear Cpl L. D.,

I can see how the fact that there are plugs instead of grease fittings at the pivot-post ring might fool you. The plugs are used because they can stand being knocked around by your tackle and gear.

But the lube you need there is GAA, and not No. 90—as many people are misled to think. If you've anything else in there, clean it out and squirt in some good ol' GAA. All you have to do is remove the plug, seat the nose of your grease gun in the hole and let fly.

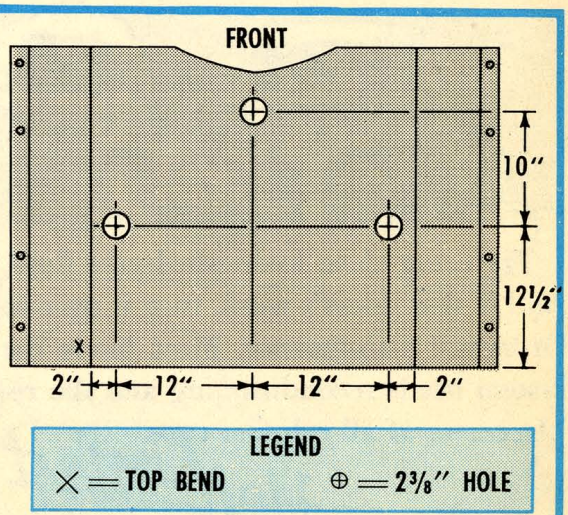
You're right about the LO. TM 9-837 covers the 5-ton basic vehicle, but so far there has been nothing on the wrecker's crane except the general treatment given it in PS #13 and the manufacturer's pamphlet that came with the wrecker.

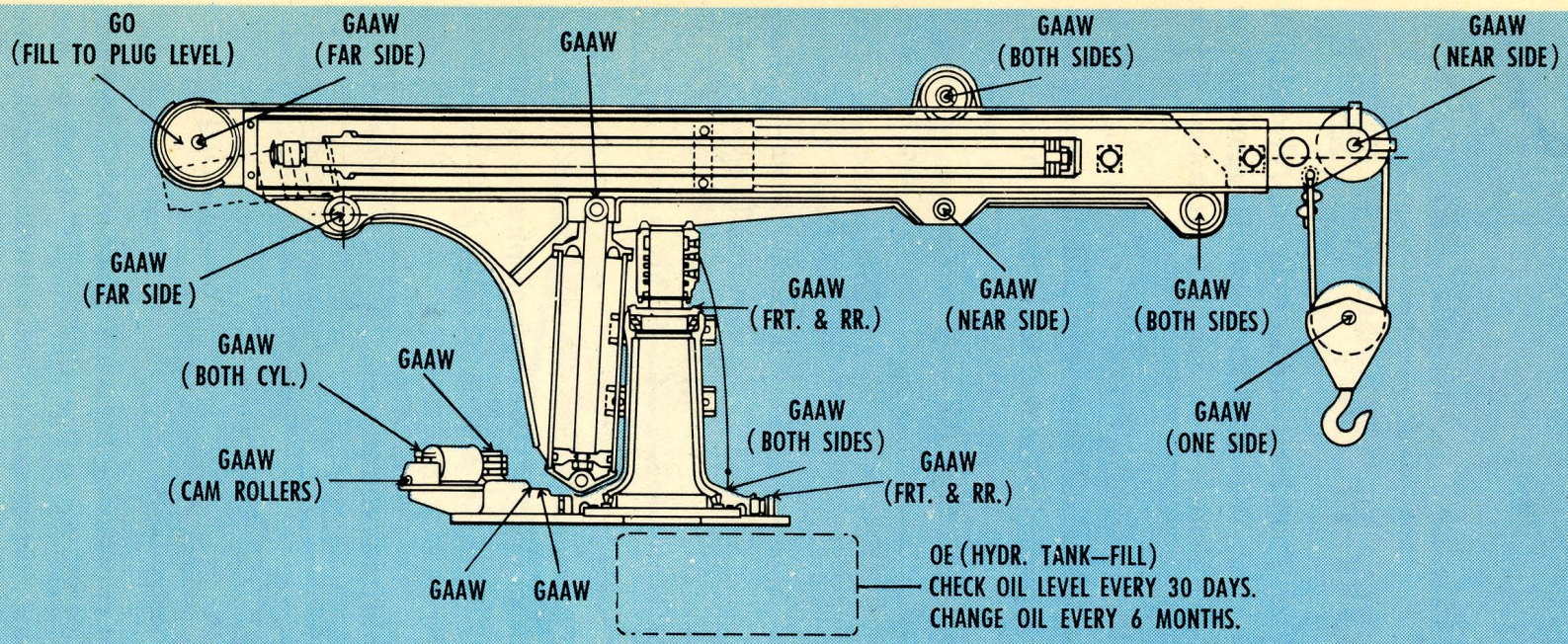
To help you and anybody else whose pamphlet may have gone by the way, I'll give you a quick look at the one I've got (see opposite page). Use it as a guide until the LO comes out.

Half-Mast

KICK THIS AROUND

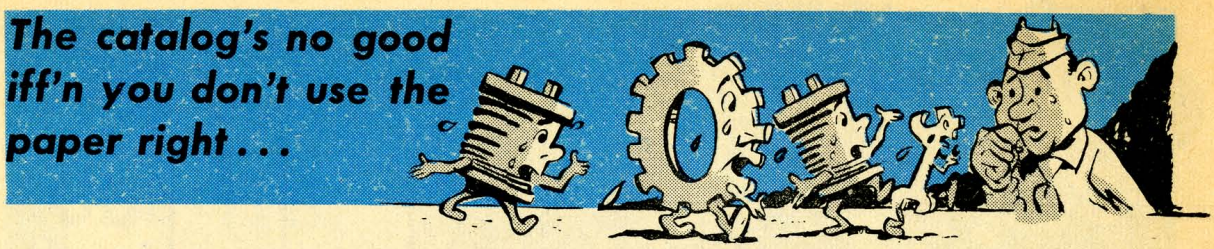
Hear some outfits are cutting access holes in the M62's swing motor "kick" cover, like shown here, so's to avoid having to remove it for each lubrication. Not only saves time and effort, they say, but helps make sure the three grease fittings under the cover don't get overlooked. If you like the idea, why not take it up with the Ol' Man?





INTERVALS	LUBRICANTS		TEMPERATURE RANGE
D—Daily W—Weekly M—Monthly 6M—6 Months	OE—Oil, Engine (Hydraulic Tank)	OE 10 MIL-O-2104 OE 30 MIL-O-2104 OES MIL-O-10925	—10° to +90° F. Above 90° F. 0° to —65° F.
	GO—Lubricant, Gear Universal	MIL-L-2105 Grade 90 MIL-L-2105 Grade 75 MIL-L-10324	Above 32° F. —10° to +40° F. 0° to —65° F.
	GAA—Grease, Auto. & Art.	MIL-G-10924	+125° to —65° F.

LUBRICATION GUIDE—M62 WRECKER CRANE



ORDER-BLANK KNOW-HOW

FORM 446

You got equipment crying for parts? Then haul out an issue slip, friend, and you'll have those babies cooing in no time. We've got the formula right here, so let's take a fast rundown on how to requisition those supplies. Of course if you use direct exchange, you don't need an issue slip.

First, find out which Ord 7 SNL you order parts from. If it is a vehicle, look on the data plate—it'll be marked there. Check the local ground rules to see how many copies of the issue slip you're supposed to make. It's usually three, sometimes four (TM 38-403 says 3, SR 750-30-10 says 4). Okay. SNL, typewriter, carbon paper, issue slips —you all set? Let's take the issue slip apart by pieces.

ISSUE SLIP

FROM	BASE OR STATION ACCOUNTABLE OFFICER Ordnance Supply Officer Fort Aspirin, Ga.
TO	ORGANIZATION OR UNIT Supply Officer 51st F.A. Bn.

ISSUE SLIP NO.
51-38-54

This is the unit you receive your Ordnance support from—maintenance and supplies, that is.

This is you.

Take your unit number, the next issue slip number open in your register, plus the fiscal year (the fiscal year begins on 1 July), and you have this.

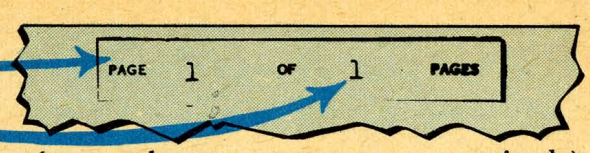
If you're requisitioning newly authorized equipment or parts, or for a new outfit, smack some XX's under "initial."

TYPE OF ISSUE		
INITIAL	REPLACE-MENT	MEMO RECEIPT
XXX		

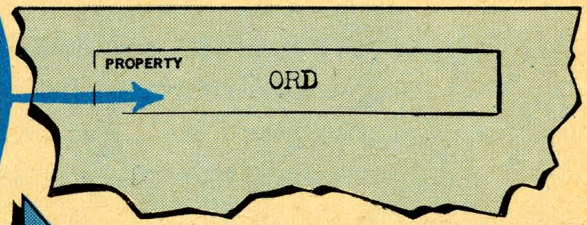
TYPE OF ISSUE		
INITIAL	REPLACE-MENT	MEMO RECEIPT
	XXX	

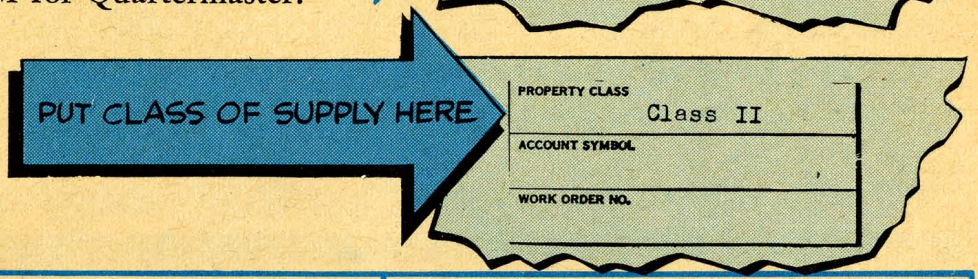
If you're ordering parts to replace initial stockage, put the XX's here. Put all "initial" items on one issue slip, "replacements" on another. For dope on the "memorandum receipt" for Ordnance equipment and material, peek at TM 38-403, page 44.

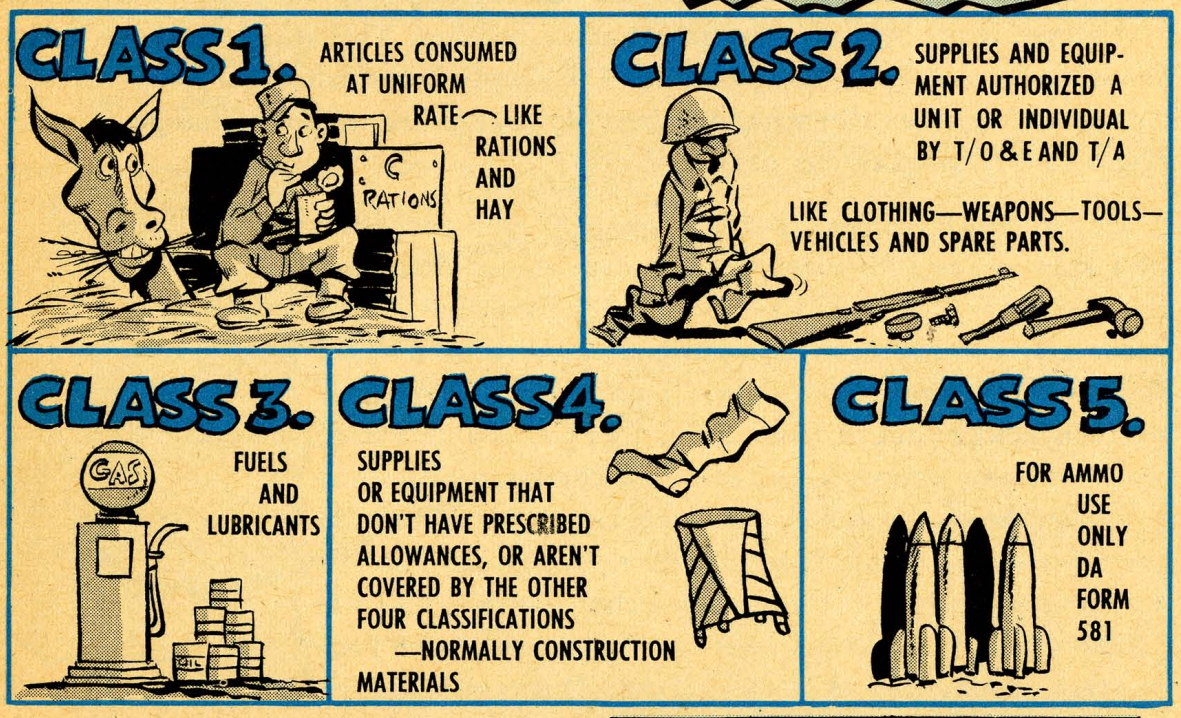
Number pages consecutively, with number of page you're writing on in first blank, total number of pages you'll use in the second. (Better let this go until you're sure how many pages are required.)



Kind of property you're ordering goes here. ORD for Ordnance, ENG for Engineer, CML for Chemical, MED for Medical, SIG for Signal, T/C for Transportation, QM for Quartermaster.







Number items 1, 2, 3, 4, etc., in item column. Next list **correctly** stock number given in the SNL for Ordnance items —for property from other services use their catalogs. Under "Nomenclature," write **all** those words the SNL has under "Description," and add the Ordnance part number at the end.

ITEM NO.	STOCK OR PART NO.	NOMENCLATURE
		G740
1.	G740-7372529	SEAL, carburetor idle adjusting screw (7372529)
2.	G740-7375059	GASKET, oil filter head (7375059)
		G758
3.	G758-8328455	CLAMP, hose, radiator (8328455)

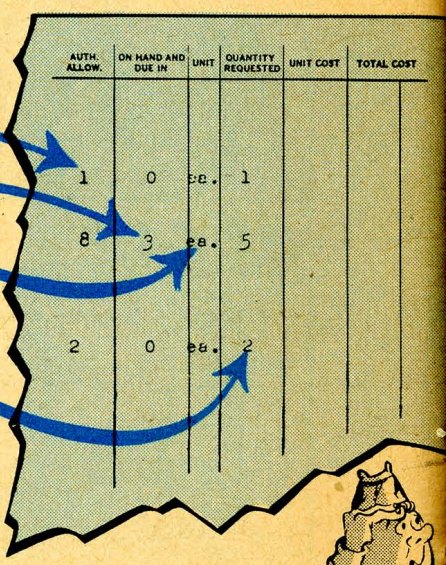
Here's where you gotta be on the ball. Description means giving all the "necessary" dope—just like a commercial mail order blank. If you're ordering a part of something else (like a gasket for an oil filter), along with "Description" given in the SNL you also put down whatever sub-group (carburetor, oil filter, seats, magneto, etc.) it's a part of. Most of the descriptions in the SNL's are complete in themselves.

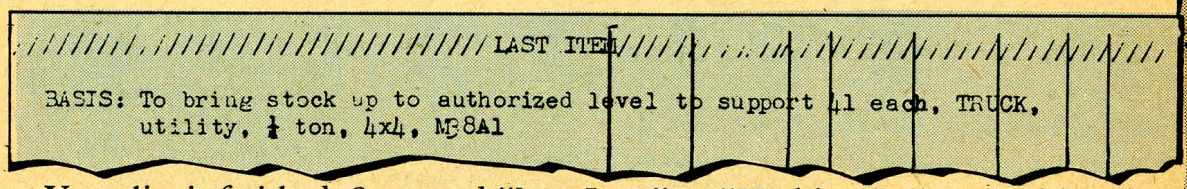
For easier handling, it's a good idea to keep the number of items per issue slip to 50 or less.

When you're requisitioning a small number of items, you put all items in one Ordnance Group (as Group A, Group D, Group G) on the same issue slip. But let's say you have a large number of items coded to G740—you put those on one issue slip, and use another one for items coded to G758. And maybe in your G Group SNL there'll be some H or J items—each letter group still gets a separate issue slip, like we just said. Of course, major items are never included on a requisition for parts. Requisition major items separately—they are normally the big items authorized by your T/O&E—weapons, trucks, etc.

Arrange items by letter group and stock number. This speeds up your order faster'n you can say "3-day-pass." And if supply has scratched a stock number change on the issue slip when you receive your order, make a change in your SNL. That'll speed things next time.

Under "Auth. Allow." put how many of each part your SNL says you're authorized. In the next column state how many parts you already have on hand, or that have been previously ordered that have not been received. You find the "Unit" where the SNL says "Unit of Issue." Subtract parts on hand, or due in, from the number you're authorized, and that's how many you can request. Skip the cost columns except in the rare instances you want supply to tell you the cost of a certain item. When the issue slip comes back to you from supply, it will have a voucher number, and the "Action" column will list how many parts they sent you, or other action, such as D/O—due out. This means they're temporarily out of stock, but as soon as more are received, you'll get yours.





Your list is finished. Surround "Last Item" or "Nothing Follows" with a slew of diagonals. Then, your basis for the request—if necessary—that is, if you have no authority for requisitioning.

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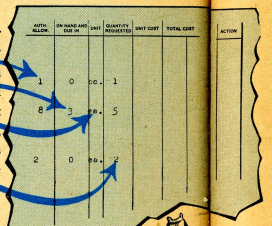

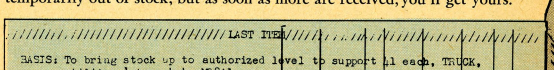

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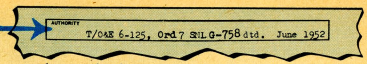
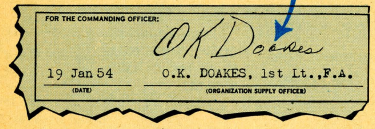


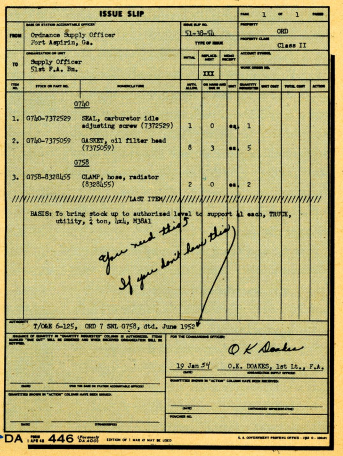
Your organization's supply officer signs here. You keep one copy and send all the others to your supply unit. And that's all there is to it.



But linger a while, friend—a few more gems of wisdom ere we part. Suppose for some reason your equipment doesn't have an SNL. What do you do? You guess at it? **No,** man.

If your vehicle is a commercial type, contact your supporting Ordnance for a manufacturer's parts book. If the SNL on new equipment isn't out yet, again ask supporting Ordnance what they're using. Describe the part as well as you can, and give the full nomenclature of the vehicle it's for. But let your supply unit know why you did it. Otherwise, they'll bounce your issue slip right back at you. And if you've lost your original SNL, it's a simple matter to requisition one from your publications office. All you need is an issue slip.

Now, see how one looks all done up pretty.



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AUTHORITY T/O&E 6-125, Ord 7 SNL G-758 dtd. June 1952

Your organization's supply officer signs here. You keep one copy and send all the others to your supply unit. And that's all there is to it.

FOR THE COMMANDING OFFICER:

O K Doakes

19 Jan 54 (DATE)

O.K. DOAKES, 1st Lt., F.A. (ORGANIZATION SUPPLY OFFICER)

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ACTION

Now, see how one looks all done up pretty.

ISSUE SLIP PAGE 1 OF 1 PAGES

FROM: Ordnance Supply Officer, Fort Aspirin, Ga. — ISSUE SLIP NO. 51-38-54 — PROPERTY: ORD — TYPE OF ISSUE: Class II

TO: Supply Officer, 51st F.A. Bn. — INITIAL: XXX — REPLACEMENT — MEMO RECEIPT — ACCOUNT SYMBOL — WORK ORDER NO.

ITEM NO.	STOCK OR PART NO.	NOMENCLATURE	INITIAL ALLOW.	ON HAND AND DUE IN	UNIT	QUANTITY REQUESTED	UNIT COST	TOTAL COST	ACTION
		G740							
1.	G740-7372529	SEAL, carburetor idle adjusting screw (7372529)	1	0	ea.	1			
2.	G740-7375059	GASKET, oil filter head (7375059)	8	3	ea.	5			
		G758							
3.	G758-8328455	CLAMP, hose, radiator (8328455)	2	0	ea.	2			
		////////////////////LAST ITEM////////////////////							

BASIS: To bring stock up to authorized level to support 11 each, TRUCK, utility, ¼ ton, 4x4, M38A1

If you need this

If you don't have this

AUTHORITY: T/O&E 6-125, ORD 7 SNL G758, dtd. June 1952

ISSUANCE OF QUANTITY IN "QUANTITY REQUESTED" COLUMN IS AUTHORIZED. ITEMS MARKED "NOT OUT" WILL BE ORDERED AND WHEN RECEIVED ORGANIZATION WILL BE NOTIFIED.

DATE — UPON THE BASE OR STATION ACCOUNTABLE OFFICER

QUANTITIES SHOWN IN "ACTION" COLUMN HAVE BEEN ISSUED:

DATE — SIGNATURE

FOR THE COMMANDING OFFICER: O K Doakes

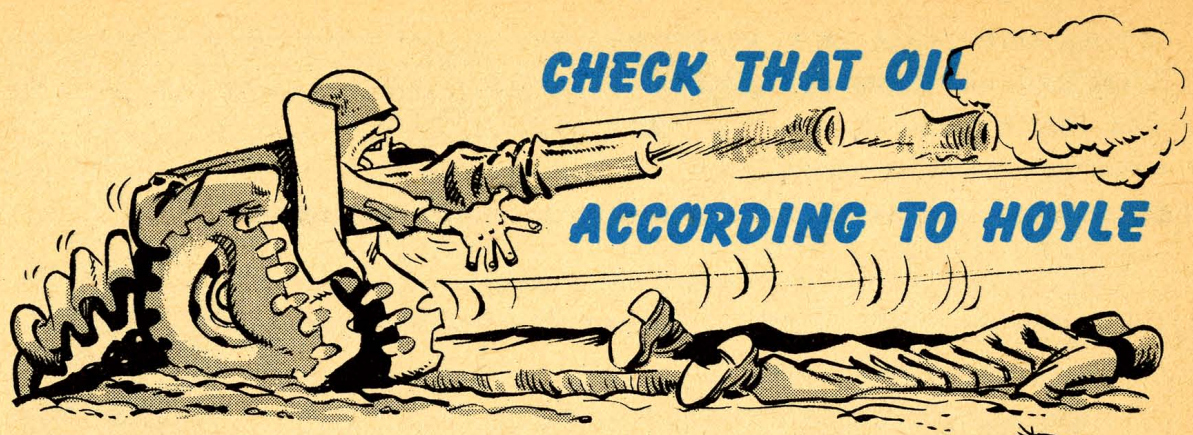
19 Jan 54 (DATE) — O.K. DOAKES, 1st Lt., F.A. (ORGANIZATION SUPPLY OFFICER)

QUANTITIES SHOWN IN "ACTION" COLUMN HAVE BEEN RECEIVED:

DATE — (AUTHORIZED REPRESENTATIVE)

VOUCHER NO.

DA FORM 1 APR 48 446 (Formerly DA AGO) EDITION OF 1 MAR 47 MAY BE USED — U. S. GOVERNMENT PRINTING OFFICE : 1953 O - 326491



FIELD ARTILLERY RECOIL

MORE BOUNCE TO THE OUNCE WHEN IT'S GOOD TO THE LAST DROP

There are two sure ways of bringing things to a screechin', grindin' whoa—either forget your gal's birthday or forget about your recoil oil. Both mistakes can put a sad end to important activities.

Look at when you fire your favorite piece. There's a heck of a force built up, and it sends the recoiling parts rearward—but fast. If there wasn't any recoil mechanism to slow up and gradually stop that action, you'd have metal-to-metal contact.

Parts would be damaged or go flying all over the place.

Just as important is the way your recoil outfit not only stops the back-kick but also sends the shooter right back frontwards—sorta gentle-like—so she's right in firing position all ready to go again.

All this slowing down and stopping is being done by oil—recoil oil—so treat it like it's the main dish.

It doesn't take much to do that, either. All you have to do is keep three big questions in mind. Here y'are:

1. AM I SURE THAT THE OIL THAT'S IN THERE NOW IS OK—FREE FROM AIR BUBBLES OR WATER?

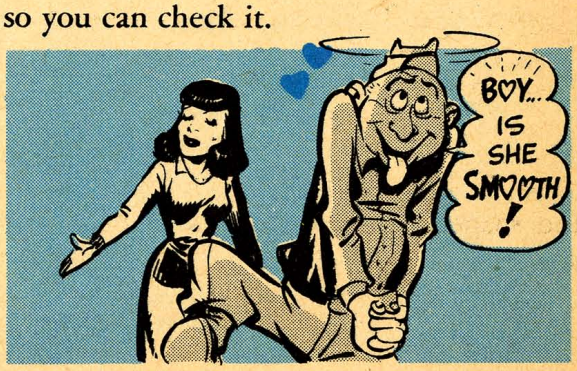
2. AM I SURE THERE'S ENOUGH RECOIL OIL IN THE GUN?

3. IF I HAVE TO PUT MORE IN, DO I HAVE THE RIGHT KIND?

Simple, huh? Well—almost, but not quite. Pour another shot of the same while we give you a sure thing.

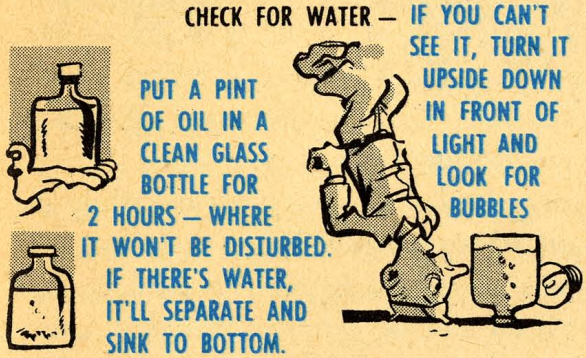
IS SHE SMOOTH?

On that first question—the best place to look for something wrong is in the counter-recoil action. That's the return stroke when she goes back into firing position. If that return motion isn't smooth, you can suspect water or air mixed in the oil. The only way to tell for sure is to let some oil out of the reserve and into a can so you can check it.



IT'S EASY

Remove the filler plug just above the oil index. Stick a liquid-releasing tool (see the TM for the Ord stock number of the tool for your gun) into the filler hole. Hand-tighten it. Then take a wrench and tighten it some more until oil starts to spurt out. Catch the oil in a can.

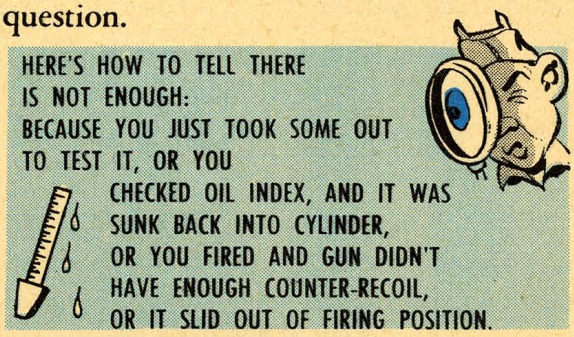


Another test for water is to put some of the sample oil in a shallow pan. Heat it enough to boil water (212° F), and you'll see tiny bubbles coming to the surface if the oil has water in it.

Now—if you have jerky counter-recoil and suspect from these tests that air or water is in the oil—yell for Ordnance maintenance personnel. They may have to purge the entire recoil system.

GOT ENOUGH?

On the other hand—everything is right with the oil, but you just don't have enough of it in the system. That's the answer to the second question.



Anyway, the oil index is not flush with the front head of the recuperator cylinder, and you've got to shoot some juice to the old gal.

Take the liquid-releasing tool out of the filler hole. You'll need a filler gun (see your TM for the Ord stock number for the right one). The oil to use is Oil, Hydraulic, petroleum base, OHA, Mil-0-5606 (with amendment 2), Ordnance Stock No. 14-0-882-213. It's known to old friends as "Pink Lady."

The experts say it's all right to mix this with Oil, Recoil, special, Spec USA 2-132, Ordnance Stock No. 14-0-3246 (commonly called "Green Dragon"), if needed, provided the gun isn't to be fired in extremely low temperatures.

You've got the filler and the oil now, but getting the two together is a ticklish job. Turn the handle of the filler counter-

clockwise until it's screwed completely back. Loosen the locking screw on the head. Screw off the head and handle as a unit.

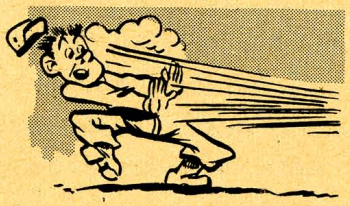
TAKE IT EASY

Pour the oil directly into the filler barrel. Pour it easy so you don't form any bubbles. Replace the head and handle and tighten the locking screw.

Be careful not to shake it. Take the cap off the nozzle and hold the nozzle end up for a minute. That lets any air that's got in rise to the top. Then turn the handle until air bubbles stop spitting out of the nozzle.

If you're not right up to snuff on this air business, you're going to be wasting a lot of time and oil. Putting air into the reserve along with the oil means the whole system will have to be bled or purged by Ordnance maintenance men.

WHEN YOU'VE GOT FILLER LOADED, SCREW NOZZLE END INTO FILLER HOLE . . . BE EXTRA CAREFUL NOT TO CROSS THREADS



BEFORE TURNING IT IN TIGHT, GIVE HANDLE A TURN TO FORCE OUT AIR IN FILLER HOLE.

USE BOTH HANDS ON GUN TO KEEP 'ER STEADY SO'S YOU DON'T BREAK THE NOZZLE OFF IN THE FILLER HOLE

ABOUT 1½ LOADS OF FILLER BRINGS INDEX FLUSH WITH HEAD.

BE CAREFUL—THE INDEX WILL ONLY SHOW A LOW OIL CONDITION. IT WON'T WARN YOU IF THERE'S TOO MUCH

IF INDEX DOESN'T MOVE CHECK FOR DEFECT AND NOTIFY ORDNANCE MAINTENANCE

Now you know. Water, air and dirt are recoil oil's worst enemies. If for any reason there's a shortage of recoil oil and you have to save or re-use some, here are some tips to save you headaches. Use a small enough container so that you can fill it up. If you only fill it part way, moisture condenses on the inside walls of the can or bottle, and you've got water in your oil.

NO DIRT, PLEASE

In draining recoil oil, avoid any possibility of grit or dirt. Then, before you put any used oil back in the cylinder, play it safe. Get a piece of clean lintless cloth or linen and strain the oil before you use it. The smallest particle of dirt lodged between a packing and piston rod or cylinder wall will cause scratches, score the rings and packing, and cause leaks.

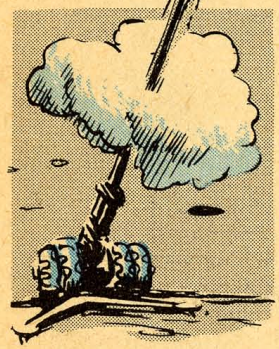
When you save recoil oil do this—use a covered container, mark the kind and grade with something that won't rub off, and store in a place where it isn't very warm.

Make it right, pal. Improper recoil is dangerous to both you and your gun. Give her enough of the right kind of oil—free from air, water, or dirt—and you can expect the best. She'll fire and slip back with no jerks, twitches or excessive bangin'.

That's your only sure-cure protection.

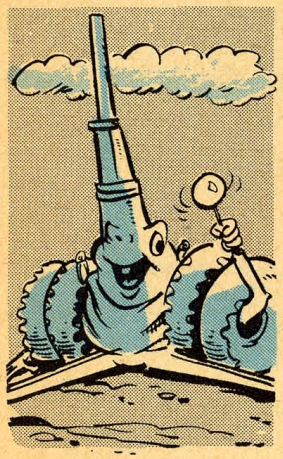
AAA RECOIL

SOME CRITTERS HAVE GOT TO BE DIFFERENT



Those AAA critters are a mite different from field pieces when it comes to worryin' with recoil-oil check.

To begin with, the AAA's don't have an oil index to show you when they need reserve oil or have too much reserve oil. Without an index, it means you've got to drain out all reserve oil. Then you start in fresh with the right amount of oil that particular gun needs.



These babies also stand by themselves when it comes to the gimmicks you need to make a recoil-oil check. Same with the oil guns you use to put the oil back in. They would be strangers to a field piece, too.

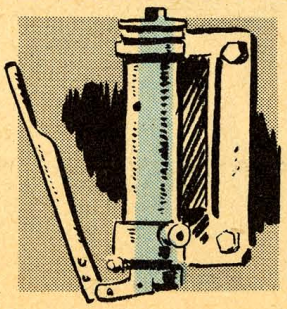
Let's see what makes these guns and gimmicks so different—

First off, let's gather up the equipment we need to do the job.

Most AAA guns take the same tool (Ordnance Stock No. 41-T-3251-600).

The recoil-oil reserve on the 120mm M1, M1A1 or the M1A2 takes 12 ounces. The screw-type hand-gun (Ordnance Stock No. 41-G-1348-265), which holds 12 ounces, will take care of this job. One filler-gun full will do it.

If you're working with the 90mm M1 or M1A1, it'll take 8 ounces of recoil oil for the reserve. The 8-ounce screw-type filler gun (Ordnance Stock No. 41-G-1348-250) can be used. You can also use the 10-ounce lever-type filler-gun (Ordnance Stock No. 41-G-1330-150).



This filler-gun has a gage on the side marked in ounces. Be sure you only fill it to the 8-ounce mark—that's all this weapon takes.

Now you get around to the 90mm M2 or M2A1 which takes 8 ounces. One full squirt of the 8-ounce screw-type gun (Ordnance Stock No. 41-G-1348-250) will take care of this piece.

Your 75mm Skysweeper formerly took 6 ounces in the reserve, but LO 9-3026-1 (12 Oct 53) has upped the amount to 9 ounces.

You can use the 10-ounce lever-type filler-gun (Ordnance Stock No. 41-G-1330-150) for the Skysweeper—but there is this hitch. Even though it's marked off in ounces to show you the 9 ounces needed, there's not enough hose to reach from the oil-filler valve to the bracket on the gun. So—if you use this filler-gun, you'll hold it in your hand and pump.

The preferred filler-gun for this job is the 10-ounce lever-type gun (Ordnance Stock No. 41-G-1348-190). This gun has a 65" piece of hose so you can reach from here to there with the filler-gun in its bracket. You'll also find a measurement gage on this gun to show you "when" on the 9 ounces.

Also, get yourself a clean can that'll hold about a quart of oil. You'll need this to catch the reserve oil when you drain it. (Always use fresh if you've got it, tho!)

Okay. You've got all the equipment. Let's go to work.

LETTING IT OUT

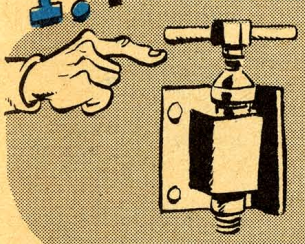
Before refilling the reserve, you've gotta check on the nitrogen pressure. You'll find the amount of pressure, and the way to get it, in the TM for each gun.

REFILLING

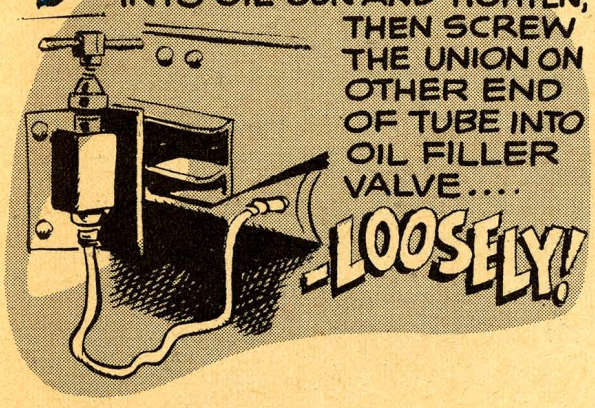
IF THE OIL'S CHECKED OUT CLEAN AND FREE FROM WATER, YOU'RE READY TO PUT IT BACK IN....

SO—

1. TAKE FILLER GUN FOR THE GUN YOU'RE WORKING ON AND PUT IT IN THE BRACKET THAT'S ON THE PIECE AND DESIGNED FOR FILLER.

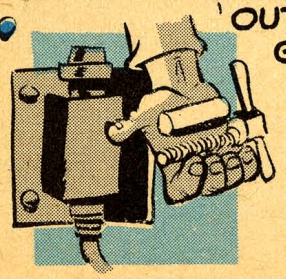


2. SCREW TUBING ADAPTER INTO OIL GUN AND TIGHTEN, THEN SCREW THE UNION ON OTHER END OF TUBE INTO OIL FILLER VALVE....

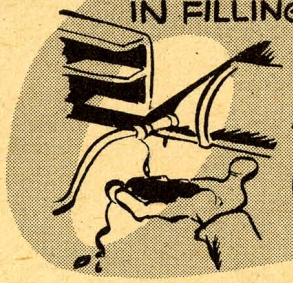


-LOOSELY!

3. TAKE SCREW AND PISTON OUT OF FILLER GUN SO YOU CAN FILL GUN WITH OIL—THEN PUT PISTON BACK IN...

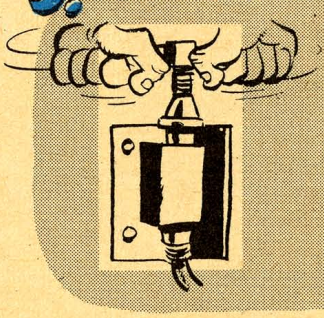


4. WORK PISTON DOWN IN GUN TO PUSH OUT AIR IN FILLING TUBE...WHEN OIL WITHOUT BUBBLES SHOWS AT TUBE UNION...

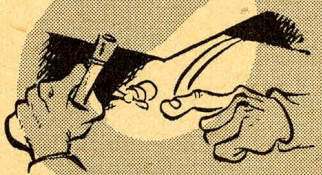


TIGHTEN THE UNION IN THE VALVE!

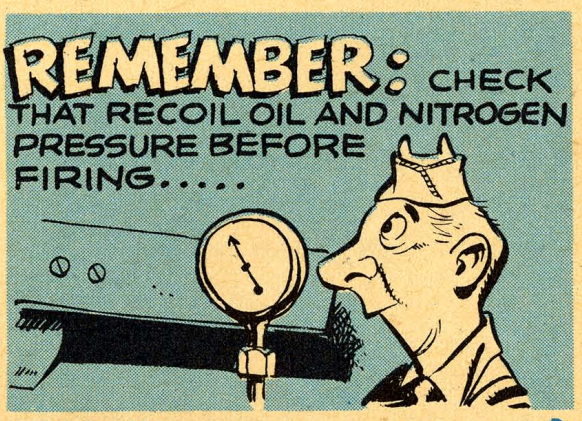
5. WITH GUN IN BATTERY---- FORCE THE AMOUNT OF OIL NEEDED FOR THE PARTICULAR GUN INTO RECOIL MECHANISM



6. TAKE FILLER GUN TUBING OUT OF FILLER VALVE--- STICK PLUG BACK IN FILLER VALVE, AND TIGHTEN IT.

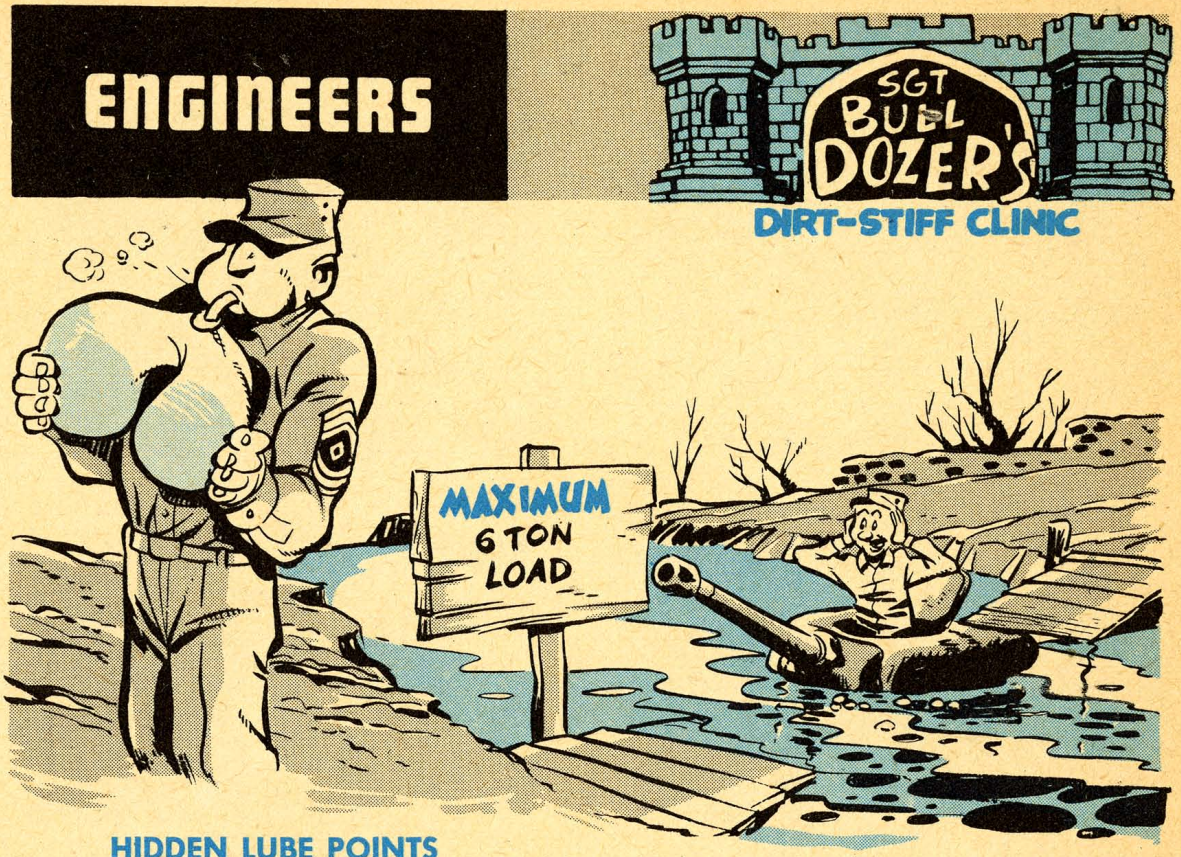


REMEMBER: CHECK THAT RECOIL OIL AND NITROGEN PRESSURE BEFORE FIRING.....



IT'LL KEEP THE PIECE AT PEACE!

ENGINEERS



HIDDEN LUBE POINTS

Be sure you don't overlook a coupla important lube points on your MRS Tractor, 150 series, Serial Nos. 1845 and up.

One of them is under the flywheel-housing's cover-plate. And the point to remember is the clutch pilot-bearing.

The other is under the plate on the lower part of the clutch-housing. That's where you'll find the clutch throwout-bearing.

The two bearings are easily overlooked. And unless you lube 'em regularly, those bearings won't bear the strain for long.

END RESULTS

Whoa there—!

Take it easy backing up. Especially when it comes to your SKD-3536, 2-wheel pole type, 2½-ton trailer. Unloaded, the rear pole on that dolly isn't wearing a thing to protect it from life's hard knocks. And what's more important, the electrical jumper cable that comes right out of the rear end's tip isn't protected either.

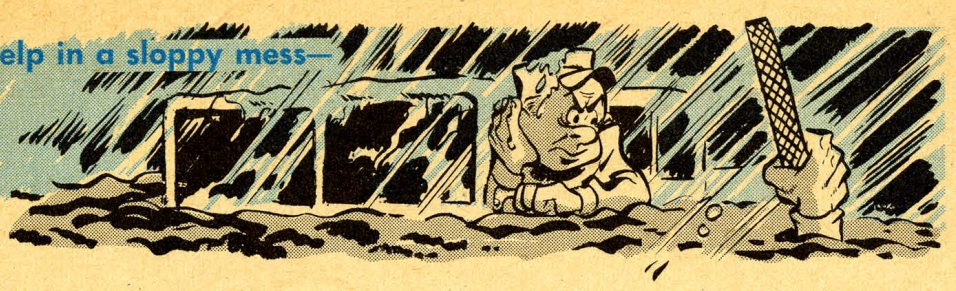
Backing into anything could mean a cracked cable. And since that cable's used to put red lights at the end and sides of any poles you may be lugging, a cut cable means no lights—that's dangerous at night.

If there's any danger of backing into anything, weld on a steel wedge that'll stick back about two inches past the pole. Put it about ⅜″ above the cable's exit. It'll protect that cable.

But with or without the wedge, use care in backing if you want to have a happy ending.

Here's some help in a sloppy mess—

TORCH AND FILE



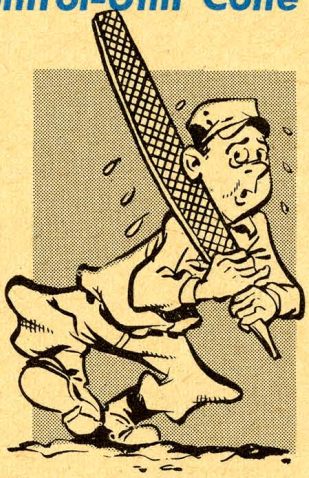
Temporary Fix for Power-Control-Unit Cone

One outfit writes in with a real tip for you—they say that in rainy weather some of their LeTourneau power-control units tightened up after a shutdown of a few hours. Next thing they knew, the dozer went up when the master clutch was shoved into action.

A check of parts showed that the power-control driving-cone's lining was the trouble-maker. Not only was it stacked with dirt, but it was loaded with water, and oil from fuel that had spilled when the tractor's tank was filled.

Now, there's something that can easily happen to you. Normally, you would return your tractor and PCU to the field maintenance company for repairs, but in case of an emergency when FM facilities are not readily available—and you are lost in the boondocks—here's something you can do to keep the job going temporarily:

Cleaning a lining takes lots of wide-awake care. But with care, it's easy. First, you fire a blow torch and dry the cone's lining—**slowly.** Heat it just enough to cook out the moisture and oil. You won't be able to blast **all** the water and oil out, anyway, so heating it too hot can't help and may harm it.



Follow that with a heavy file to grind off the dirt. Your filing will also leave a roughness on the lining's surface for a better grip (Fig. 1).

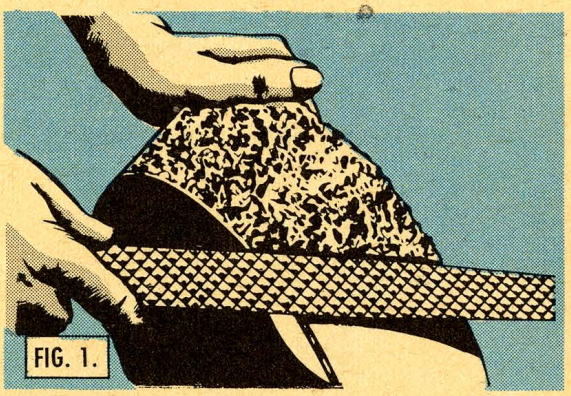


FIG. 1.

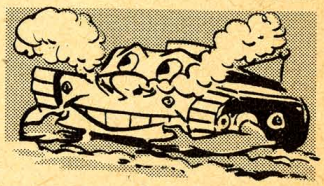
All these easy touches will make for a cone that can do the trick. But remember, it's only for temporary. A new lining's safer and better.

And while you're remembering, put all the fuel in the fuel-tank—none on the power-control unit where it only makes mischief. We aim to please. You aim, too—please.

No Cigarette, But Here's — A FILTER TIP

Believe it or not, a big tractor breathes over 200,000 cu. ft. of air (14,000 lbs) through its air cleaner in a normal day's doings. Which is about as much air as your barrack's Romeo spills about his romances. And, in both cases, the air is filled with plenty of dirt. But with the tractor, it's up to you to keep it clean.

That's why there's an air cleaner on your engine. To do its job, that gadget needs a little help. It'll clear the air all right—but only when the oil in its filter cup's thin and clean enough to flow freely into the filter section. There it'll wash back the dust and dirt that gathers 'round.



And that's where you come in. To keep it working, you've got to take off the filter cup (Fig. 1) and check the oil often.

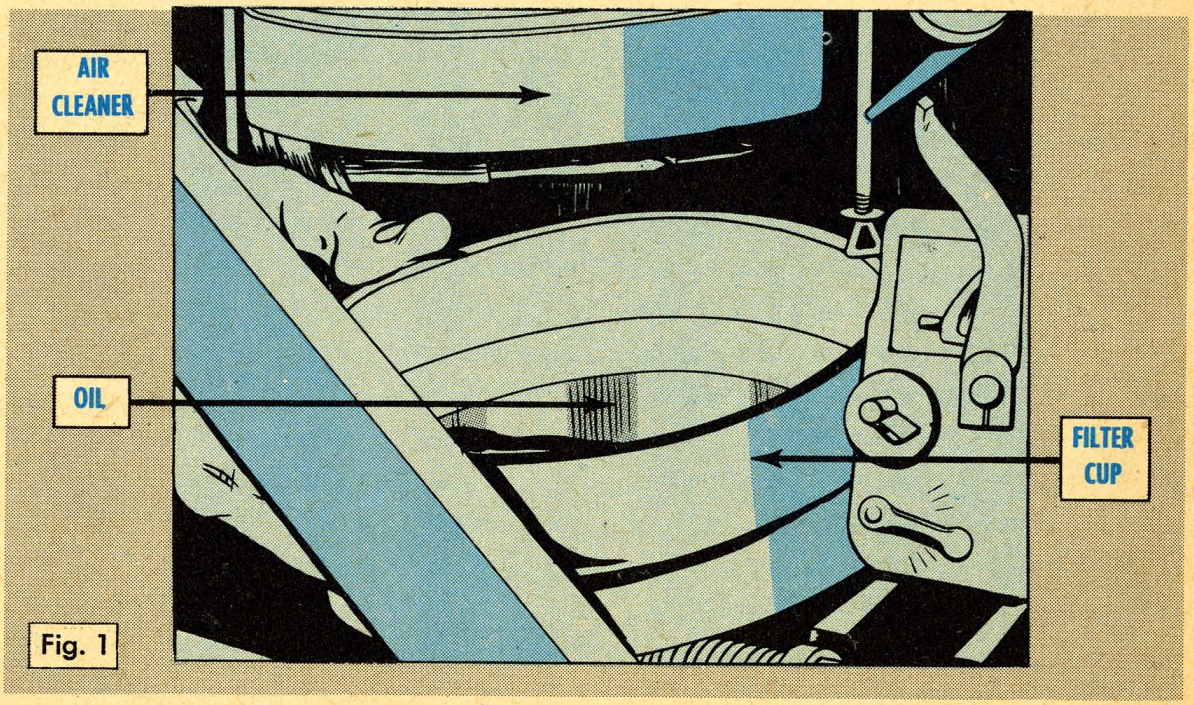
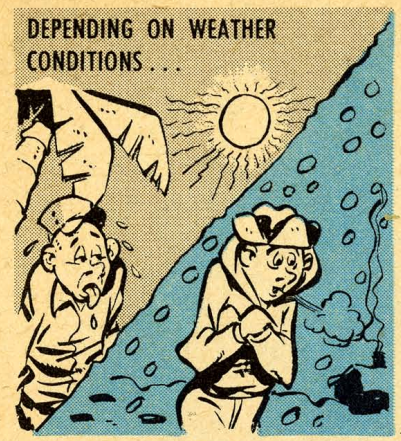
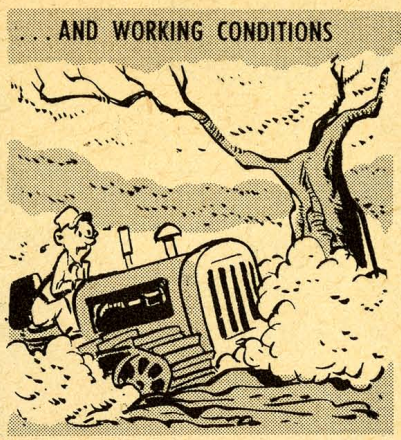
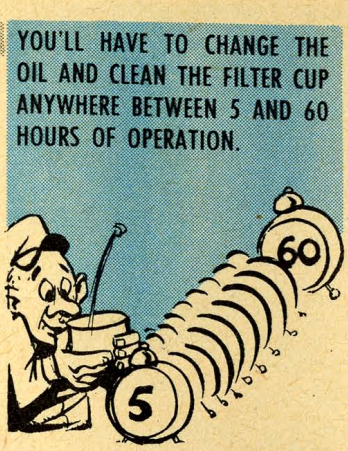
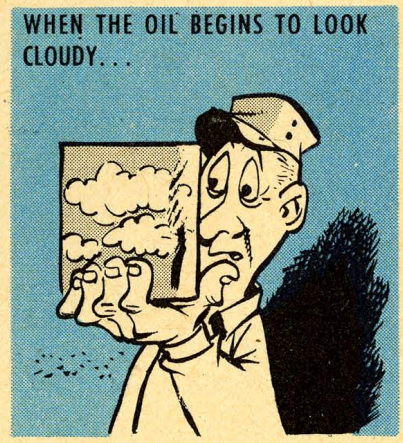


Fig. 1









The center intake-pipe is one important point you may overlook in servicing the air cleaner. In all oil-washed cleaners, oil sometimes splashes into this inlet pipe and collects dirt as air is sucked into the cleaner.

Unless you pluck this dirt, the pipe's opening gets blocked, and the engine can't get all the air it needs. This adds up to power loss and smoky exhaust.

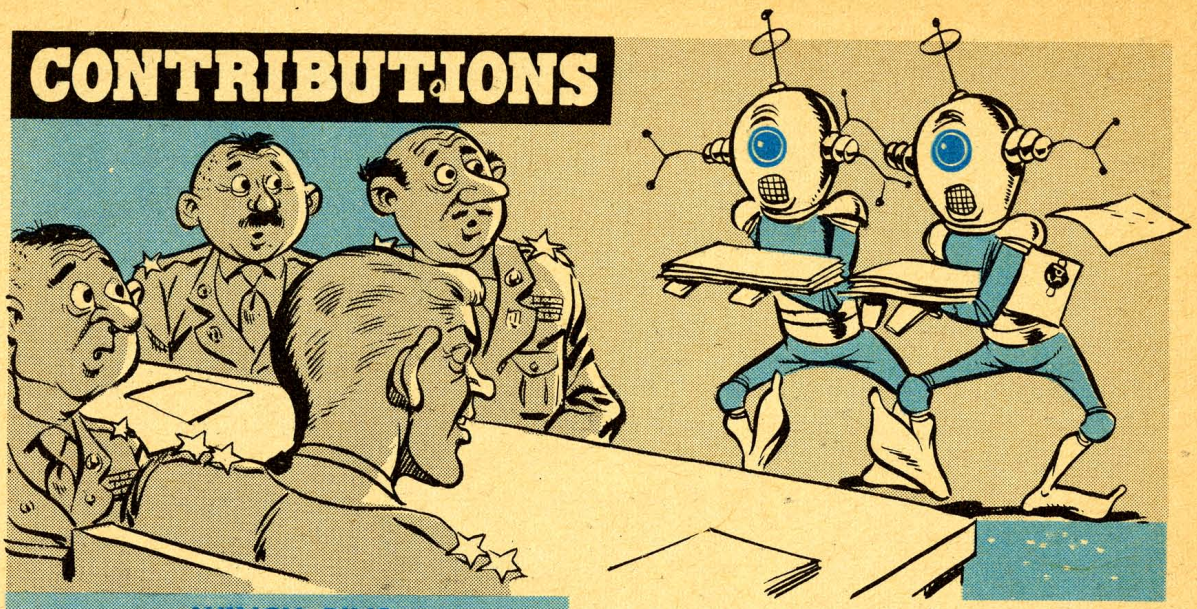
So give your engine the air—good, clean air, and plenty of it.

A BANG-UP JOB

If you stop the engine of your truck-mounted air compressor by turning off the fuel to the carburetor, open the valve again soon's she's dead. If you leave it off, you drain the carburetor. When you move the engine with the pot dry, the carburetor-float will bang around in a dry bowl.

This could crack the float, making it leak and sink when the fuel flows. And a float that sinks—isn't. So keep your carburetor a-float by keeping the fuel-line open.

CONTRIBUTIONS



WINCH PINS

Dear Editor,

Having had an M62 wrecker pull its front cable-roller completely off the winch when the universal-joint yoke seized to the winch drive, I suggest that these parts be taken apart, cleaned and lubricated at the 1000 and 6000-mile inspections.

The shear pin loses its value as a safety valve if the surfaces are corroded together or if they run hot and seize up after the shear pin lets go. In fact, it might be a good idea to put a grease fitting on this universal-joint yoke and have it greased on the weekly greasing. This is one place where surplus grease will do no harm.

Lt Col Harry A. Snyder
Camp Atterbury, Indiana

(Ed Note—Seems like an excellent idea. While the frozen drive only pulled the roller off the wrecker, much more damage could have occurred. Better take the sleeve apart once in awhile than to have the cable take you apart. See Fig. 1.)

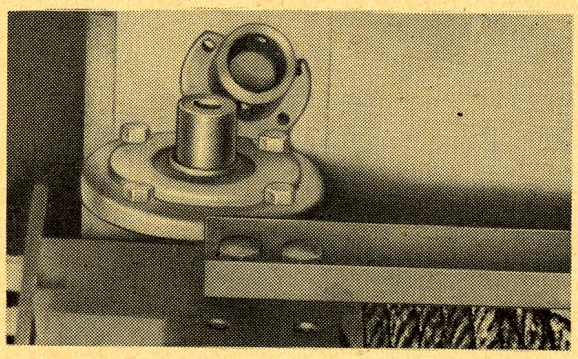


Fig. 1—A worm's-eye view of the yoke removed for a periodic cleaning and lubing.

DISTRIBUTOR ADJUSTMENTS

Dear Editor,

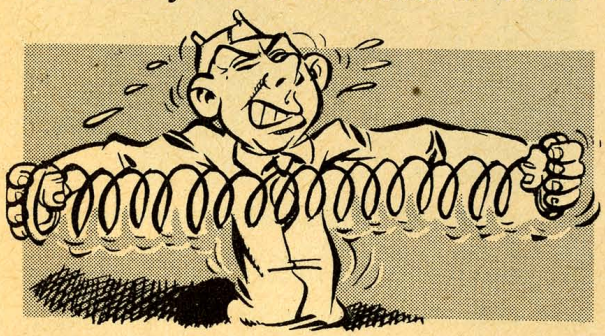
In regard to the method of spring-tension adjustments on the Delco-Remy and Auto-Lite distributors covered in PS #15, I use the same method for both.

I find that the fiber block attached to the stationary point on the Delco has an elongated hole. By using a ¼" open-end wrench to loosen the nut, I can adjust the spring tension by moving the fiber block as you do on the Auto-Lite.

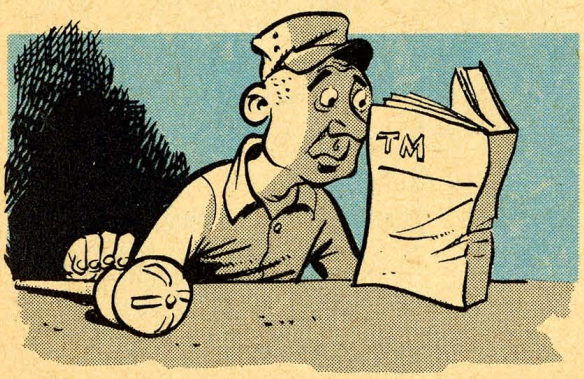
You get into trouble trying to bend the spring unless you are careful. Why get into trouble when you don't have to?

James D. Brown
Atlanta General Depot

(Ed Note—If you can get the right spring tension by use of the elongated hole in the fiber block . . . it's OK. But, that can't always be done because in Delco-



Remy distributors there's no connection between spring tension and the elongated hole. It's possible for the spring to be at one extreme end of the hole and need more tension, or it could also be at the opposite end and need less tension. That's why bending is the only sure way to adjust the tension on the Delco distributor. As for getting into trouble when bending the spring—that goes for almost everything if it isn't done properly. Your adjusting method is fine for the Auto-Lite, but stick to the TM when it comes to the Delco.)



SWITCH PARTS-KITS

Dear Editor,

I suggest that it would save time and effort if all the parts which are always used together in repairs were stocked as kits, rather than as individual line items.

For example, in repairing starter switches, we have found that you always need a switch assembly, a gasket, a plunger and a plunger spring. These are carried as four separate line items, but are always drawn and used together. Why not stock 'em as one line item, "Kit, cranking motor switch"?

MSgt Termote
Ft Sheridan, Illinois

(Ed Note—Sounds like an excellent idea. We have passed it on to the Supply people, who say they have initiated action to "kit" it up.)

ONE TO STRING IT

Dear Editor,

Here's a great labor and time saving device. The idea enables **one** man to string wire from a 105mm howitzer to the exec post as soon as the piece reaches the firing point.

The reel bracket issued with the Switching Kit MS-155/GT plays the big part.

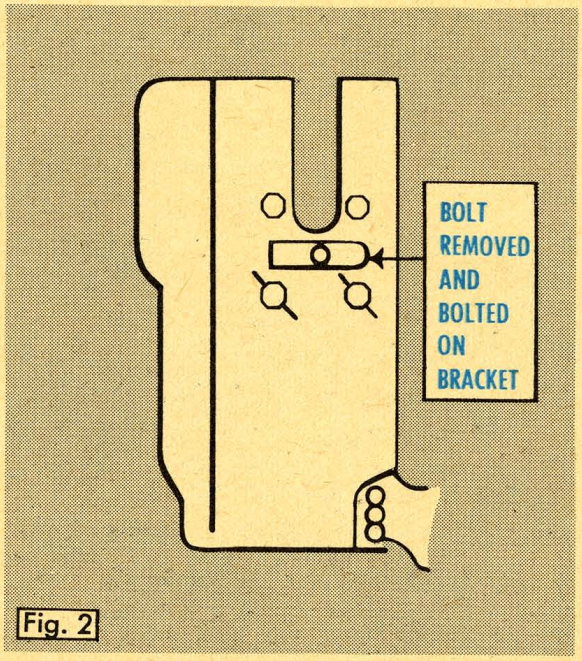


Fig. 2

This reel bracket is mounted on the right auxiliary-shield of the howitzer. You don't have to drill or change anything to mount it. All you do is take out the **one** bolt under the sight opening (Fig. 2) in the shield. You then stick the bracket on and replace the bolt.

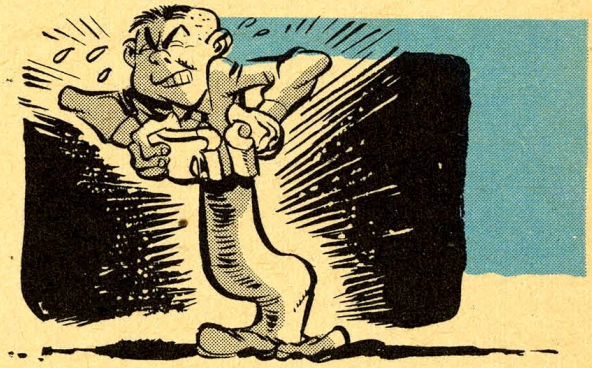
MSgt Gooden
Ft Sill, Oklahoma

(Ed Note—Sure looks like you've got something. Should speed things up in getting ready to fire.)

TIGHT FIT

Dear Editor,

We assemble battery cables and battery-post clamps (Fig. 3) so that the cable lug is under the bolt-head end of



the attaching bolt rather than under the nut end. It keeps tight much longer. When installed under the nut, the cable acts as a wrench and loosens the nut.

MSgt Miller
Ft Eustis, Virginia

(Ed Note—Sounds sensible. Why not try it?)

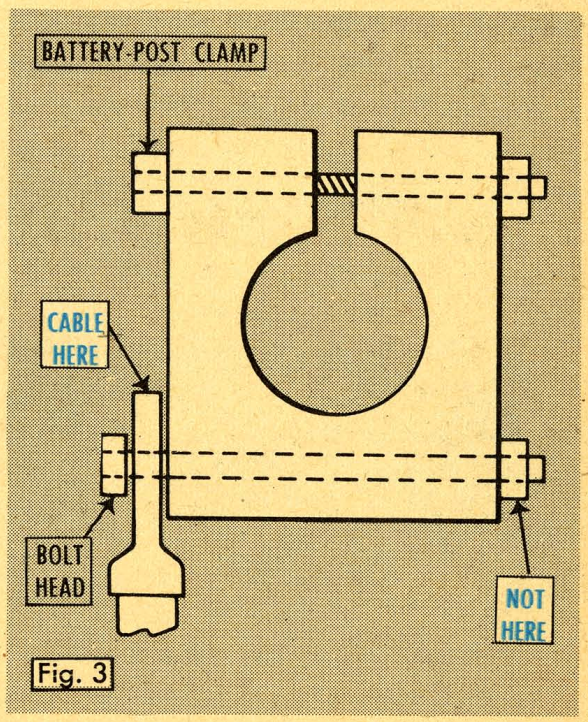


Fig. 3

Connie Rodd's BRIEFS

Hydra-Matic lube change

Let the crankcase oil be your guide—when choosing lube for the Hydra-Matic transmission on your GMC 2½-ton 6x6 trucks. You use the same weight in the transmission and crankcase. Jot a note on your LO 9-819A to use OE 30, instead of OE 10, in temperatures above +32° F. See DA Circular 25 (9 Mar 54) for the why-for.

New vibration dampers

It's an old story that a lot of vibration dampers on the 5-ton IHC trucks have failed. And it's true. If that's your sob story, it can have a happy ending. Try the new vibration damper under Ord Stock No. G744-8380657. It takes six hex-head screws (Ord Stock No. G162-1667123) for installation. Use the two from the old damper and requisition four more.

Put it on paper

From what's said, some M62 wrecker's front winch-spooler-trolley wheels are slapping dents into the track. Enough, we hear, to foul its operation. If the same is happening out your way, send out a UER (Form 468). And pencil a note to PS, too.

Oil warning lights

All the Continental engines of the AO-895 and AV-1790 series are getting a new low oil-pressure warning light-switch Ord Stock No. G251-8678906. The new switch comes on at around 17 pounds, instead of around 30 pounds. So—if and when ever you see that red light looking at you, kill your engine and holler for Ordnance. You can't disregard that light at low engine speeds—when you see it, you got troubles.

In your eye

One of the saddest guys ever seen is the joe who sat behind his cal. .30 machine gun and got the driving-rod right in his eye when he lifted the backplate. When you give the rod that ¼-turn to lock its pin in the bolt for takin' her apart, make sure it's caught—and keep your face and everyone else's outta the way to be sure.

Air gage check

Been getting erratic readings on your dashboard air gages lately? Try taking the engine compression gage from the 2nd-echelon kit and shoving it into the right rear trailer-brake-hose coupling. The rubber cone on the compression gage will fit tightly into the rubber washer on the hose connector. Now turn on the valve and read your actual tank air pressure. If the dashboard gage doesn't agree, chances are you need a new sending unit.

LESS THAN 1% "CHICKEN"

YES, FRIENDS...
FOR THOSE WHO WANT
IT STRAIGHT
FOR THOSE WHO NEED
THE LATEST **MAINTENANCE**
INFORMATION...**FAST**
AND **OFFICIAL**
FOR THOSE WHO WANT
TO LEARN HOW THEIR
BUDDIES DO IT...
IT'S **PS** TEN—TO ONE

IT'S SMOOTHER... PS **MILDER, TOO**